

A City for the Nation

The Army Engineers
and the Building
of Washington, D.C.,

1790 - 1967

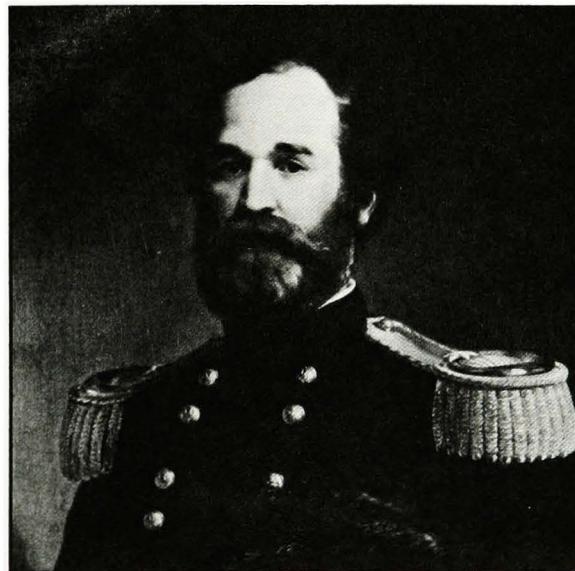
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A City for the Nation

**The Army Engineers
and the Building of Washington, D.C.,
1790 — 1967**

By
Albert E. Cowdrey



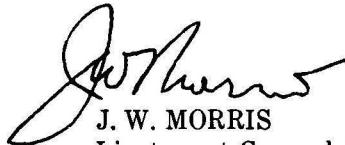
Brevet Maj. Gen. Montgomery C. Meigs

Historical Division
Office of Administrative Services
Office of the Chief of Engineers

Foreword

The time is not far distant when the U.S. Army Corps of Engineers will mark the second century of its involvement with the city of Washington. As architects, builders, planners, and administrators, Corps personnel, military and civilian, have played many roles in the history of the nation's capital. The relation of the community on the Potomac to the federal government has always been intimate. In this uniquely federal city, Engineers who served the Army, the President, and Congress inevitably had much to contribute to local needs as well.

A City For The Nation tells this story more completely than it has ever been told before. In a condensed and highly readable monograph, Dr. Cowdrey has brought new material to light and integrated much information that was scattered and unrelated before. Both the scholar and the general reader will find its perusal a rewarding experience.



J. W. MORRIS
Lieutenant General, USA
Chief of Engineers

The Author

Albert E. Cowdrey received degrees in history from Tulane and The Johns Hopkins Universities. His articles have appeared in journals in the United States and Great Britain. He was a member of the Historical Division, Office of the Chief of Engineers, from 1971 to 1978

Preface

Many hands have aided the writing and production of this study, and it is both a duty and a pleasure to acknowledge at least the major contributors. In 1972, Michael S. Steinberg got the project underway with a contract research paper that suggested some of the dimensions of the problem and indicated many useful sources. After he joined the staff of the Institute of European Studies, the researching and writing of the planned volume fell to me. I found the task congenial in itself, and still more pleasant because of the assistance which I received from many people in and out of the Corps of Engineers. Robert W. Blakeley of the Office of Administrative Services backed the project from its inception. In the Historical Division office, Lenore Fine and Jesse A. Remington were consistently helpful. Three retired Corps officers — Lt. Gen. Frederick J. Clarke, Maj. Gen Alvin C. Welling, and Brig. Gen. Robert E. Mathe — granted interviews which were particularly enlightening on the Engineer role in recent Washington history. Dan Morgan Watt gave valuable insights on the workings of the Aqueduct. John Nolen, Jr., formerly director of the National Capital Planning Commission staff, and George J. Stansfield, historian of the National Defense University, were similarly helpful. The personnel of the National Archives displayed their usual patience, highlighted in the aid given me by Elaine Everly and Dorothy Provine. Once the manuscript had taken form, the criticisms of Frederick A. Gutheim and Harold K. Skramstad proved especially useful in guiding revision. My colleagues, Dennis S. Lavery and Frank N. Schubert, provided many useful suggestions. Final polish was given by a gifted editor, Joseph R. Friedman. Agnes Riedel and Susan Baldwin selected many of the pictures, and the last draft was typed by Chris Malone. It is due, however, to all these able and industrious people to state that any errors which linger in the manuscript are my own.

Washington has been lucky in its historians. The unique mingling of national and local themes has given birth to impressive and lively books, many of which are cited in the pages that follow. To the people named above belongs much of the credit if this brief study finds a place in the ranks of a distinguished company.

ALBERT E. COWDREY
Baltimore, 1978

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Chapter I

The Grand Plan

Late on the rainy evening of 9 March 1791, after a hard journey from Philadelphia, a lone horseman rode unannounced and unexpected into the little Potomac River port of Georgetown. Seeking out the mayor, he introduced himself and explained his presence. He was Pierre Charles L'Enfant, French-born artist, architect, and engineer, a former major in the Continental Army and well known to President George Washington. At his request, L'Enfant had come to survey the neighboring countryside, where the new Federal City, the future capital of the United States, would soon rise. Welcoming the newcomer, the *Georgetown Weekly Ledger* noted: "He is earnest in the business and hopes to be able to lay a plan . . . before the President upon his arrival in this town."¹

Yet L'Enfant's instructions made no mention of a plan; they called for a topographic survey and nothing more. President Washington intended to acquire the land before designing the city. Since early February, surveyor Andrew Ellicott, assisted by an elderly black scientist, Benjamin Banneker, had been at work laying out the boundary lines of the 10-mile square of the Federal District. Because no one as yet imagined that the capital city would cover the entire 100 square miles, its location within the District was a subject of dispute—a dispute that Washington hoped to turn to advantage by playing one area against another. Through Secretary of State Thomas Jefferson, he directed L'Enfant to prepare a contour map, beginning at the Eastern Branch (a stream for which Jefferson would shortly revive the Indian name Anacostia) and proceeding northwest to Tiber Creek, some distance east of Georgetown.² Washington's aim was to bluff the Georgetown proprietors and to prod them into offering their land on terms favorable to the government.

Unaware of his role as cat's-paw, L'Enfant plunged eagerly ahead. Through days of almost incessant rain he crisscrossed the woods and fields between the Eastern Branch and the Potomac, glimpsing, through fog and mist, pleasant landscapes, splendid views, bubbling springs, and splashing creeks, and visualizing a stately city in that setting. But his first

1 (1) *Georgetown Weekly Ledger*, Mar. 12, 1791, quoted in Elizabeth S. Kite, *L'Enfant and Washington, 1791-1792* (Baltimore: The Johns Hopkins Press, 1929), 38. (2) Ltr, L'Enfant to Jefferson, 11 Mar 1791, *ibid*, 36.

2 (1) On Ellicott, see Andrew Ellicott, "A Letter. . . to Robert Patterson, in Two parts," *Transactions of the American Philosophical Society*, IV (1799), 49; Catherine V. Mathews, *Andrew Ellicott, His Life and Letters* (New York: The Grafton

enthusiastic report to Jefferson drew a cool response. With sudden candor, the Secretary confided that he wished to keep rival groups of landowners "in equilibrio," adding, "We shall be obliged to you to endeavor to poise their expectations."³ The truth was clear: the site that inspired



Pierre Charles L'Enfant, by Leon Chatelain.

L'Enfant was a pawn in a speculative game. While the visionary Frenchman was pursuing the ideal, Washington and Jefferson were practicing the politician's art of the possible.

For the Virginians, a great city on the Potomac was an old dream. Since early manhood, Washington had longed to develop the river as a highway to the West, at first only for trade, but later as a bond of national union as well. Even before the Revolution, he had envisioned a bustling port, an entrepot for Western produce just below the fall line near the head of navigation. When, after the war, the search began for a permanent national capital, Jefferson and James Madison backed this same locale as a nearly perfect site—central, defensible, and on tidewater. Also clear in their minds were the advantages to their native Virginia in "The establishment of Alexandria on a par with Baltimore as a secondary place of commerce."⁴ Against strong opposition, they waged a subtle, relentless, seven-year campaign to bring the capital to the Potomac Valley, finally winning it through a political

Press, 1908). (2) On Banneker, see Silvio A. Bedini, *The Life of Benjamin Banneker* (New York: Charles Scibner's Sons, 1972), 103-36. (3) Ltr, Jefferson to L'Enfant, March 1791, in Kite, *L'Enfant and Washington*, 35.

3 Ltr, Jefferson to L'Enfant, 19 Mar 1791, in Kite, *L'Enfant and Washington*, 39.

4 Cited in Saul K. Padover, ed., *Thomas Jefferson and the National Capital 1783-1818* (Washington, 1946), 9.

bargain with Alexander Hamilton. The Residence Act of 16 July 1790 instructed the President to locate the Federal City on the Maryland side of the river between the Eastern Branch and Conococheague Creek, which emptied into the Potomac 75 miles upstream. Washington lost little time in announcing his choice and starting preliminary work.⁵

Yet the capital on the Potomac remained a distant and still doubtful goal. Many signs seemed to portend the project's failure. The nation at large showed little enthusiasm for fixing the seat of government in the Maryland countryside. Newspapers ridiculed the idea, and New York editor Philip Freneau, in the character of a citified hired girl, played mockingly on the name Conococheague, whose last syllable was locally pronounced *jig*:

*My master would rather saw timber; or dig
Than see them removing to Conogocheague —
Where the houses and kitchens are yet to be framed
The trees to be felled, and the streets to be named.*⁶

Philadelphians, whose city was to serve as the temporary capital until 1800, freely predicted a victory for the Schuylkill over the Potomac. Once comfortably settled in the Quaker City, they reasoned, Congress would choose to remain. In fact, that seemed to be its intention. While agreeing by a narrow margin to authorize the Federal City, the lawmakers refused to vote one cent for the undertaking.⁷

A sense of urgency gripped the city's sponsors. With ten years at most to carry out their aim, and no federal money, they fell back on expedients. Grants promised by Maryland and Virginia — some \$200,000 in all — would help to launch construction. But, for the most part, the city would have to finance itself. It would be built as a speculation, with landowners giving part of their holdings to the government in the expectation that the part they retained would rise in value. Hence, Washington and Jefferson were obliged first to come to terms with the proprietors and to raise money through sales. Inevitably, their angle of vision differed widely from L'Enfant's.

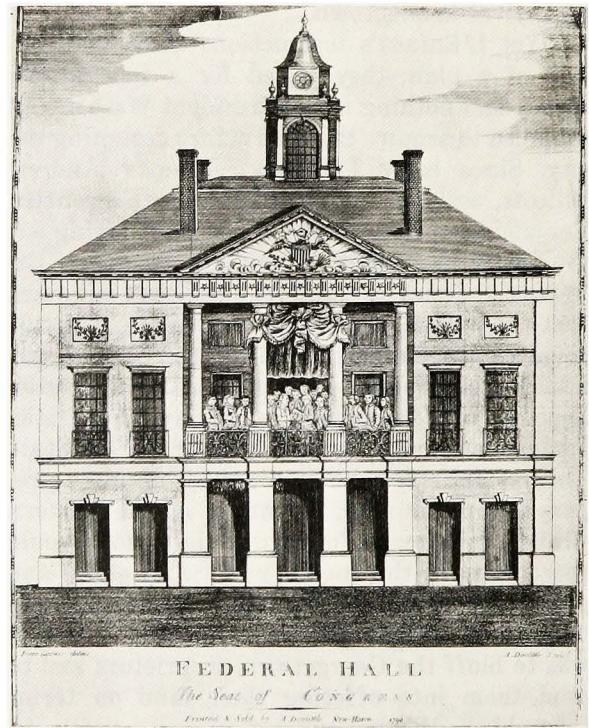
Born in Paris in 1754, the son of a court painter whose battle scenes adorned Versailles, L'Enfant at twenty-two had volunteered for the Continental Army, receiving a commission as

5 (1) Ltr. Washington to Morris, 1 Feb 1775, in John C. Fitzpatrick, ed., *The Writings of George Washington from the Original Manuscript Sources, 1745-1799* (Washington, 1931), III, 17-21. (2) Julian P. Boyd, ed., *The Papers of Thomas Jefferson* (Princeton: Princeton University Press, 1965), XVII, 163-83; XIX, 3-58. (3) 1 Stat. 130.

6 Quoted in Boyd, *Papers of Thomas Jefferson*, XVII, 453.

7 William Tindall, *Standard History of the City of*

lieutenant of Engineers. His education at the French Royal Academy of Painting and Sculpting had provided him little if any practical knowledge. As one of his countrymen observed, he had "indeed some talent for drawing figures . . . but nothing of use for an engineer."⁸ Despite his lack of training, he proved to be a worthy officer, serving as aide to Baron von Steuben, fighting bravely in the South, where he was wounded and captured, and winning the favor of General Washington. True to type, the artist in uniform kept pen and ink at hand, illustrating Von Steuben's *Regulations*, drawing portraits of comrades in arms, sketching scenes, and designing insignia. At the war's end, he hoped to help form a permanent Corps of Engineers, perhaps even to head it.⁹ But when Congress dashed these hopes by disbanding most of the army, he looked for new opportunities in civilian life.



Cartoon of Federal Hall, 1790.

Settling in New York, the thirty-year-old ex-officer embarked on an architectural career. Success came swiftly. He built mansions for the rich and powerful, among them Rufus King and Alexander Hamilton. The striking altar piece of St. Paul's Chapel and other ornamental interiors were his work. Chosen in 1788 to remodel the old

Washington, *From a Study of the Original Sources* (Knoxville, Tenn.: H.W. Crew & Co. 1914), 37.

8 Quoted in H. Paul Caemmerer, *The Life of Pierre Charles L'Enfant* (New York: Da Capo Press, 1970), 41.

9 (1) Ltr. Washington to Lafayette, 25 Sept 1778, in Kite, *L'Enfant and Washington*, 4. (2) Memorial, L'Enfant to Congress, *Papers of the Continental Congress, Letters, Vol. LX-VIII*, 579-603, Lib Cong.

City Hall as a meeting place for Congress, he earned wide acclaim. Displaying a penchant for grandeur, he spent twice the sum budgeted for the project, embellishing the chamber with murals, gilt, and marble. Renamed Federal Hall, the building was hailed as the most beautiful in America. Here, on 4 March 1789, Congress met for the first time under the newly ratified Constitution. And, here, on 30 March, President Washington took his first inaugural oath.¹⁰

A veteran who knew Washington, a talented man who had tasted public patronage, L'Enfant responded enthusiastically to the news that a new city might rise as the nation's permanent capital. In 1789 he wrote the President asking to share in the undertaking. No country, he wrote, had ever had such a chance to choose the site of its capital. It should be a great city, its plan "drawn to such a scale as to leave room for the aggrandizement and embellishment which the increase of the wealth of the nation will permit it to pursue at any period however remote . . ."¹¹ Valuing L'Enfant's skill, Washington had by January 1791 accepted his application — but not for the task L'Enfant desired. Instead, the President had sent him to play a specific small role in the speculative game. But it was not in the Frenchman's nature to keep to such a role. By nature creative and expansive, the delight of his friends and the despair of his employers, L'Enfant never in his life learned to think small. Despite his orders he began to produce, not a mere topographical survey, but the sketch of a great city.

He worked it out on his own. His superiors were far away in the temporary capital, Philadelphia. He knew that the President would visit Georgetown at the end of March. He must present his plan to Washington at that time. The weather remained bad, fog gathered, rain and snow fell alternately, but L'Enfant spurred his horse day after day through the streaming woodlands, feeling out ground that he could not always see. Little by little, his ideas took form.¹²

Early on Monday, 28 March 1791, Washington arrived at Georgetown to view the work of Ellicott and L'Enfant and bargain with the landowners. The President's eight-day journey from Philadelphia had not been excessively long by the standards of the time, or excessively uncomfortable, though a boat he was traveling in stuck on a sandbar of the Severn River near Annapolis, obliging him to sleep

10 Kite, *L'Enfant and Washington*, 8n, 9-11.

11 Ltr, L'Enfant to Washington, 11 Sept 1789, *ibid.*, 34.

12 Caemmerer, *Life of L'Enfant*, 136-37, and "Topographic Features Relating to the Plan of Washington, D.C.", *The Military Engineer*, XLIV (1952), 15-19.



Topography of the Federal District.

aboard in cloak and boots in a berth too short for his six-foot frame. In Georgetown at last, he breakfasted, met with the commissioners he had appointed to lay out the Federal District, and was escorted by the mayor and city officials to Suter's Inn on High Street. Here he examined Ellicott's surveys and received from L'Enfant a lengthy report outlining a "grand plan" for the city. At seven o'clock the next morning Washington set out to examine the ground, later noting in his diary that "from the unfavorableness of the day, I derived no great satisfaction from the review." He did, however, lead L'Enfant to a spot near the mouth of Tiber Creek on the Potomac and tell him that the President's House should stand there. Thus the President tacitly accepted L'Enfant as the designer of the Federal City.¹³

The afternoon was given over to the transaction of essential business. Washington met the two groups of landowners whose competition he had been stimulating, presenting himself to them as a peacemaker. All their lands, he said, would not be too much for the city, and he urged them "by combining offers [to] make a common cause of it . . ." Quarrels and delays, he said, encouraged the enemies of the Federal City and would cause the proprietors to lose the substance for the shadow.

His arguments were forceful, and on the following day the landowners agreed to surrender half their land to the federal government. An agreement was quickly drawn up, stating that the President should have the city laid out as he saw fit; that streets would become public property free of charge, while other public reservations would be paid for at \$66.67 an acre; that wood growing on all land would belong to the proprie-

13 (1) Quote from John C. Fitzpatrick, ed., *The Diaries of George Washington*, IV (Boston and New York: Houghton Mifflin Company, 1925), 153. (2) Tindall, *Standard History*, 74-77. (3) Kite, *L'Enfant and Washington*, 56.

CITY OF WASHINGTON

JIN
1792



Plantations and Townships South of Georgetown, 1792.

tors; and that all remaining land would become the joint property of the landowners and the United States, to be divided into lots and sold for what it would bring in a rising market. Washington was elated. Between the lots and the state grants already made, he had his financial shoestring at last. With its aid he would raise a great capital.¹⁴

Giving his final instructions to the commissioners, to L'Enfant, and to Ellicott, he left Georgetown for Mount Vernon. In the Federal District, the first phase of work moved rapidly to its conclusion. On 15 April, Ellicott, the commissioners, and the townspeople of Alexandria joined in a Masonic ceremony to dedicate a stone marker at Jones' Point — the starting point of the final survey.¹⁵ The preliminaries were over; the creation of the city could now begin.

Central to its development would be the plan that L'Enfant had unveiled for Washington. He had made his survey as ordered, but the topography had meaning for him only in terms of the city to be built upon it. Hills suggested prospects and sites for great buildings; streams suggested docks and warehouses. L'Enfant had argued that the level ground between the Eastern Branch and nearby Jenkins Hill was the "most eligible position for the first settlement of a grand City"

The ground was high and springs abundant. Furthermore — pointed out the former Army Engineer — the site commanded the surrounding country; control of this area and the Virginia heights across the river would protect the city from attack. For the Eastern Branch he foresaw a great future. Deep near its mouth, it narrowed above Evans's Point and became easy to bridge. The stream could be lined with arsenals, wharves, warehouses, and an establishment for naval stores. Jenkins Hill itself, overlooking low ground that ran to the Potomac, would be a natural site for "Public Edifices" standing "with a majestic aspect over the Country all around and . . . advantageously seen from twenty miles off"

For topography so varied L'Enfant rejected the idea of a rectangular street plan. Such a "tiresome and insipid" scheme could be justified only in a city without views. For the Federal City a more diverse plan, "really grand and truly beautiful," must be devised. A hint of L'Enfant's intentions came in his proposal for a major avenue to run between the planned bridge on the Eastern Branch and another over the Potomac at "the place of the Two Sisters" above Georgetown. L'Enfant envisioned the future Pennsylvania Avenue paved for carriages, with walks on both sides planted with double rows of trees — "a

14 Fitzgerald, *Diaries of Washington*, IV, 154-55.

15 Bedini, *Life of Benjamin Banneker*, 123-25.

street laid out on a dimension proportioned to the greatness which . . . the Capital of a powerful empire ought to manifest."¹⁶

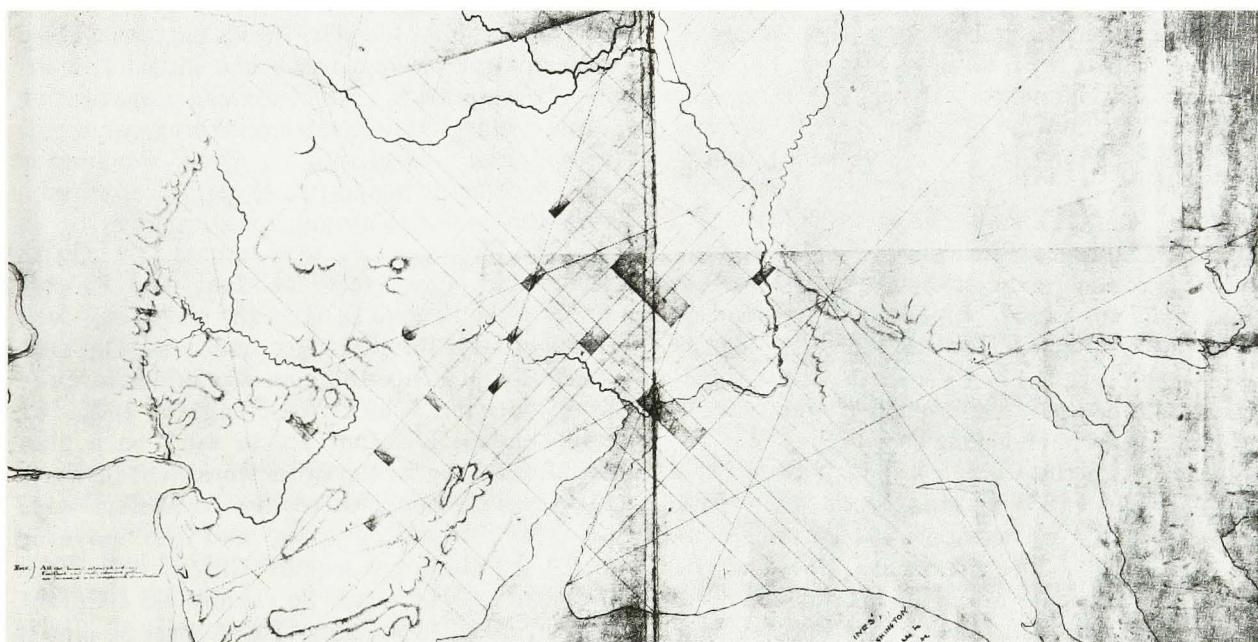
While L'Enfant was beginning to develop these basic ideas in his Georgetown office, more suggestions arrived from his superiors. A few days after their meeting, Washington sent the engineer a sketch by Jefferson showing a small city with the Capitol and President's House both west of Tiber Creek and connected by a "President's walk" — perhaps the first sketch of the Mall. Seeking further ideas, L'Enfant asked the Secretary of State for any plans of European cities he might possess. Jefferson sent him the plans of Frankfurt, Amsterdam, Strasbourg, Paris, Orleans, Bordeaux, Lyons, Montpelier, Marseilles, Turin, and Milan.¹⁷

Yet this formidable array of information had little effect on L'Enfant. Instead, to develop the city plan, he reached within himself. He had grown up at Versailles. To build the palace complex of the French kings, landscape architect Andre Le Notre had devised a formal language whose sole aim was to express magnificence — a language of intersecting avenues, rondpoints, malls, formal gardens. It was the image of Versailles that guided L'Enfant as he labored over his plans during April, May, and June. And by the last week of June the vision was clear enough for the engineer to visit Washington at Mount Ver-

non and lay before him "the drawing of the whole city."¹⁸

Although memory had guided him, the plan which he now presented to Washington was strikingly original.¹⁹ Despite his earlier criticism, he based his street plan on a regular grid, but then overlaid the grid with diagonal avenues, partly for contrast, partly to create "pleasant prospects," but principally to reduce real distances and facilitate settlement. Exceptionally wide — 160 feet from housefront to housefront — they were to be planted with double rows of trees on each side. Serving "like the main artery in an animal body, which diffuses life through the smaller vessels, and inspires vigor, and activity throughout the whole frame," the avenues gave both dramatic lines of sight and swift access to the government buildings whose sites L'Enfant suggested.

The "main establishment" of the government would lie south of the thoroughfare between the Potomac and the Eastern Branch. Here stood the President's House near the site chosen by Washington. A mile and a quarter to the east, upon the brow of Jenkins Hill, stood the Capitol. In justifying this arrangement to Washington, L'Enfant appealed both to the Constitution and to the President's love of formality. The distance from the Executive to Congress would not be too great, wrote L'Enfant, "as . . . no message to nor



L'Enfant's Sketch, Presented to George Washington on 19 August 1791.

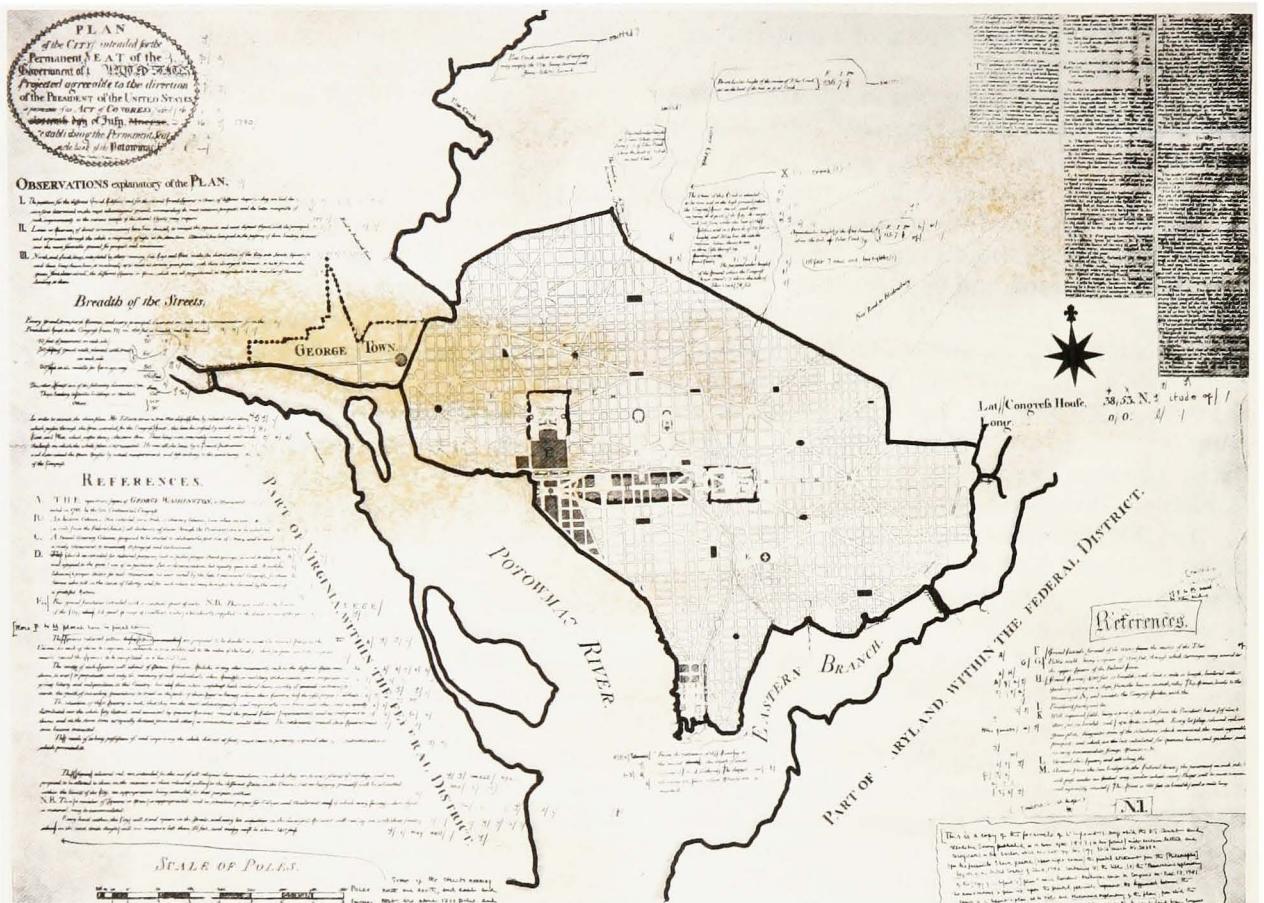
16 Above paras summarized from L'Enfant, "Note Relative to the ground lying on the eastern branch . . .", in Kite, *L'Enfant and Washington*, 43-48.

17 Ltr, Jefferson to L'Enfant, 10 Apr 1791, *ibid.*, 48-50.

18 (1) Quote from *ibid.*, 52n. Italics in original. (2) John W. Reps, *Monumental Washington: The Planning and Development of the Capital Center* (Princeton: Princeton University

Press, 1967), 6. (3) Sibyl Moholy-Nagy, *Matrix of Man: An Illustrated History of the Urban Environment* (New York, Washington, London: Frederick A. Praeger, 1969), 146-48.

19 The paras that follow are summarized from rpt, L'Enfant to Washington, 22 Jun 1791, in Kite, *L'Enfant and Washington*, 52-58.



L'Enfant's Plan of 1791, Published ca. 1887.

from the President is to be made without a sort of decorum which will doubtless point out the propriety of Committee waiting on him in carriage . . ." Separation of powers, in the governmental part of the city, was expressed by separation in space.

But L'Enfant's plan transcended the political. Like Washington, he wished to see the capital become a commercial center, and so proposed a canal to aid shipping by connecting the Potomac to the Eastern Branch. This waterway would also serve to increase the city's formal beauty. Tiber Creek could be used to create a forty-foot waterfall "issuing from under the base of the Congress building," with the water escaping through the canal. Parallel with this waterway, the Mall would be developed as a grand avenue, 400 feet wide, ending due south of the President's House at an equestrian statue of Washington himself. L'Enfant hoped to see the Mall lined with embassies, and Pennsylvania Avenue with gardens, theaters, "rooms of assembly, academies, and all such sort of places as may be attractive to the learned and afford diversion to the idle." On this note of French *joie de vivre* he ended a presentation of striking originality accompanied by some clever flattery

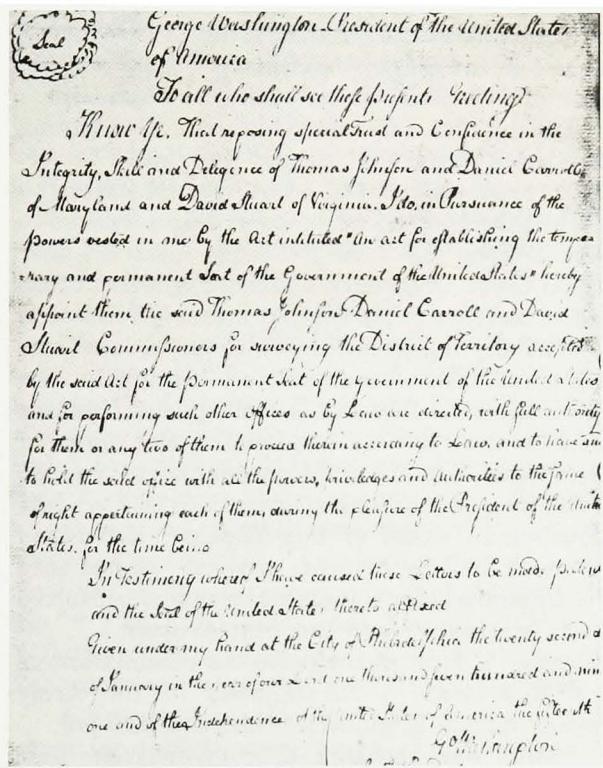
20 Ltrs, Andrew to Sarah Ellicott, 26 Jun 1791 and 9 Nov 1791,

of the President himself. Into a pattern derived from his native France, he had introduced elements inspired by the American Constitution while not neglecting commercial progress, scenic beauty, and urban liveliness. When Washington accepted the plan, the future capital acquired a form that would distinguish and enrich it.

The preliminaries were almost over. On 28 June Washington met L'Enfant and Ellicott again in the Federal District and made final decisions on sites for the major buildings. The next day in his presence the plan was laid before the proprietors. When Washington left for Philadelphia, L'Enfant set to work on a plan suitable for engraving. Other work went forward: Ellicott's axemen cleared swaths 40 feet wide along the boundary lines, and the surveyor joined L'Enfant on Jenkins Hill to define the quadrants of the city.²⁰ So rapidly did L'Enfant work that on the evening of 27 August he placed his completed plan before the President at Philadelphia. Less than six months had passed since the engineer first saw the Federal District.

Yet amid these achievements came signs of trouble between L'Enfant and the commissioners. At the base of the difficulty lay the pre-

carious finances of the new city. While giving L'Enfant the problems of design to solve, the President had handed over to the commissioners many of the problems of finance — and the problems were heavy. On the 8th and 9th of September, Jefferson, Madison, and the commissioners held an important meeting in Georgetown. Some of their decisions involved no difficulties. They named the streets, for example, and called the capital itself "The City of Washington" in "The Territory of Columbia." Other decisions were substantive. Short of money, the leaders decided on a quick sale of lots to bring in needed cash and establish the value of District property as collateral for future loans. Deceived by their own commitment to the city, the conferees overestimated the value of the lots



Washington Appoints the Commissioners of the Federal City, 1791.

— and ignored criticisms which L'Enfant had already raised about this method of funding. In his last report to the President, the engineer had urged that major projects be financed by loans and built quickly. Then the lots could be sold gradually as land values rose. This procedure, he thought, would bring in maximum revenues and cause the city to develop evenly.²¹

21 (1) Ltr, Jefferson to Commissioners, 28 Aug 1791, in Kite, *L'Enfant and Washington*, 61. (2) Padover, *Jefferson and the National Capital*, 69,74.

22 (1) Jefferson quote from notes on the meeting, 8 Sept 1791, Padover, *Jefferson and the National Capital*, 69. (2) L'Enfant quote from rpt, 19 Aug 1791, in Kite, *L'Enfant and Washington*, 68.

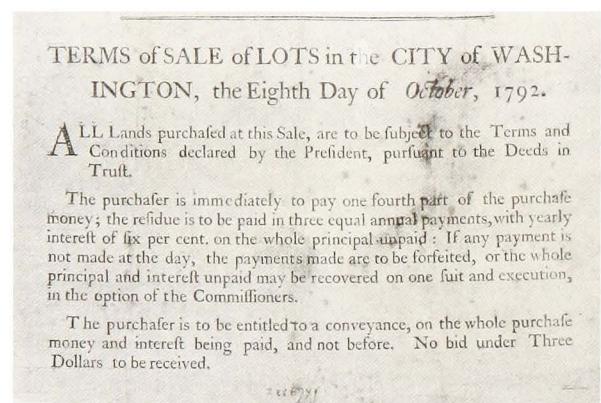
The issue was of some importance, and it was clearly one in which the commissioners had full authority. Jefferson emphasized the commissioners' belief that "if the present occasion of securing the Federal seat on the Potomack should be lost, it could never more be regained . . ." Speed as much as money was of the essence. Funds were low, and money granted by Virginia was hard to collect from the state's near-empty treasury. But L'Enfant, accustomed to the lordly ways of French kings, was unable to imagine that a ruler of Washington's stature could lack both money and credit.

Beyond this, for L'Enfant the issue had become more than a simple matter of policy. He wished to see the city take form, not in the usual helter-skelter way, but as a painting or formal garden might develop in the hands of an artist — first the dominating masses, then the multitude of smaller forms. In piecemeal action and in the greed of speculators who would buy up lots for resale he perceived a fundamental danger to his plan. Hence he argued that "a sale this fall is premature," that it would "be confined to a few individual speculators," and that it would "fail through lack of numbers."²² In all these assertions he was quite correct — certainly more accurate than the politicians. He had, moreover, a clear right to express his opinion. If he had been content to make his protest and then loyally try to help the sale succeed, he might have emerged with enhanced prestige.

As he predicted, the sale held that October was a fiasco. The miserable profits could be blamed partly upon the weather — and upon the uncertainties that surrounded the whole Federal City. But L'Enfant unwittingly let himself in for a great share of the blame. Ordered to produce a plan for display at the sale, he failed to do so. Worse, shortly afterward he wrote a letter to Tobias Lear, Washington's secretary, in which he had the poor judgment to brag that he had taken care "to prevent the exhibition of the general plan at the spot where the sale is made." Lear showed Washington the letter, and he passed it on to Jefferson. L'Enfant's action cost him dearly. The President was angry, and rebuked him; the powerful Secretary of State became covertly hostile; and relations between himself and the commissioners became exceedingly strained. They would shortly grow even worse.²³

23 (1) Quote from ltr, L'Enfant to Lear, 19 Oct 1791, in Kite, *L'Enfant and Washington*, 76. (2) Ltrs, Washington to Jefferson, 30 Nov 1791, in Padover, *Jefferson and the National Capital*, 79; Washington to David Stuart, 20 Nov 1791, in Fitzpatrick, *Writings of Washington*, XXXI, 420-21.

November brought a new incident. In 1790, Daniel Carroll of Duddington, an important land-owner and nephew of a commissioner, had started to build a mansion in the area that would become Southeast Washington. One attraction of



Broadside Announcing the Sale of Lots, 1792.

the site he chose was an excellent spring. The spring had also caught L'Enfant's eye, and he planned to locate a large public square with fountains where the half-built mansion stood. When he told Carroll that the site was wanted for public purposes, the proprietor met him with evasion and delay, hoping that his family connections would enable him to keep the site. L'Enfant feared the same thing — a precedent that would encourage others to seek changes in the plan. On 17 November he sent his assistant Isaac Roberdeau to demolish the mansion's walls. Afterward, he briefly notified the commissioners of what he had done.²⁴

Questions of tact aside, the demolition raised some tricky issues. The outraged commissioners felt that their authority had been wantonly violated. Washington asked Jefferson for a formal opinion on the incident, and Jefferson replied that L'Enfant had broken the law, since the plan had not yet been promulgated, and due process had not been observed in seizing the property. He urged Washington to order L'Enfant to submit to the commissioners. With great tact, Washington tried to heal the rift. He urged the commissioners to understand L'Enfant's point of view; at the same time he instructed L'Enfant that the commissioners were the legal authorities on the scene. "Having the beauty and regularity of your plan only in view," he wrote the engineer, "you pursue it as if every person, and thing, was obliged to yield to it . . ." Carroll was soothed with a money payment from District funds, and

24 Kite, *L'Enfant and Washington*, 80-91.

25 (1) Quote from ltr, Washington to L'Enfant, 1 Dec 1791, in Tindall, *Standard History*, 134. (2) Jefferson, "Observations on Major L'Enfant's Letter . . .", in Kite, *L'Enfant and Washington*, 93-96. (3) See, e.g., ltr. Washington to Commissioners, 18 Dec 1791, in Fitzpatrick, *Writings of Washington*,

for a time, all seemed to go well. Then, in early 1792, a new dispute ended L'Enfant's connection with the Federal City.²⁵

This time the fundamental question was one of priority — how to use the District's limited funds to best advantage. Inescapably, it also became a question of authority over their allocation. A clash of personalities degenerated into accusations of slander and sabotage. The trouble began because L'Enfant, in preparing plans for the Capitol building and the President's House, kept his intentions to himself — "he said he had [the plans] in his head," Jefferson would later relate. Uncertain of what L'Enfant meant to do, but well aware that no plans had been submitted to or approved by them, the commissioners grew increasingly angry and reluctant to pay the laborers L'Enfant had ordered to dig clay for brickmaking at the building sites. In this touchy situation, the break came when L'Enfant was absent on a Christmastime journey to Philadelphia to arrange for engraving his plan. Two young assistants, Balantine Baraof and Isaac Roberdeau, remained on the scene, Baraof directing work in the District while Roberdeau prepared to take a work party to the stone quarries near Aquia Creek. Ordered by the commissioners to attend a meeting in the District instead, Roberdeau set out anyway in obedience to his orders from L'Enfant. The commissioners promptly discharged all the laborers, declaring that finances made it desirable to employ the men only on piecework. When Baraof attempted to resume work, the commissioners threatened to have him arrested. In midst of this impasse, Roberdeau returned, and by his own account "rushed into the Commissioner's apartment and . . . insulted them in a public and indecent manner . . ."²⁶ Securing a writ of trespass, the commissioners had Roberdeau — future chief of the Army Topographical Engineers — clapped into jail.

Here was the sort of confrontation that Washington had used all his diplomacy to avoid. The commissioners reported their action to Philadelphia, threatening at the same time to resign unless they were freed from L'Enfant's "caprice." Washington, as he had done throughout, stuck by the legal authorities, though adding a plea that L'Enfant might have "a due degree of liberty" in the future. The President intended to ignore the ultimatum and bring his team together again.²⁷

XXI, 445-48.

26 (1) Quote from ltr, Roberdeau to L'Enfant, 9 Jan 1792, in Kite, *L'Enfant and Washington*, 109. (2) Tindall, *Standard History*, 137.

27 Kite, *L'Enfant and Washington*, 132-34, 137.

He had reckoned without L'Enfant. To the engineer, the commissioners were men who lacked technical knowledge and tried to control work they did not understand. On 6 February, with Roberdeau still in jail, he threatened to resign "unless the power of effecting the work with advantage to the public, and credit to myself is left [to] me."²⁸ For a last time the politicians tried to repair a situation which had slipped out of control. Jefferson urged L'Enfant to continue his work in "full subordination" to the commissioners, and Washington, still hoping to retain L'Enfant's services, sent Tobias Lear to his lodgings to make a personal appeal. But L'Enfant, overwrought, snapped that he had "heard enough of the matter."

This was an affront that the President would not overlook. On 27 February, at Washington's order, Jefferson informed L'Enfant that his services in the Federal City were at an end.²⁹

Some final efforts at conciliation were made. With few exceptions, landowners of the District had become L'Enfant's staunch admirers. Appreciating his talent and vision, they also saw in him a man as anxious as themselves to push forward the major construction which alone could make their land valuable. Already these men were feeling the financial pinch that was to bankrupt many of them, for they could neither farm their land nor sell it profitably. In L'Enfant's departure, they saw danger to the whole project. Writing to Washington, Jefferson, and L'Enfant himself, they urged compromise. But the President and Secretary were adamant, and the planner himself declared that his return was an "impossibility... under a system of direction which must perpetuate misunderstanding."³⁰ The break was final; the city had lost L'Enfant. And when the commissioners let Roberdeau out of prison, he followed his chief.

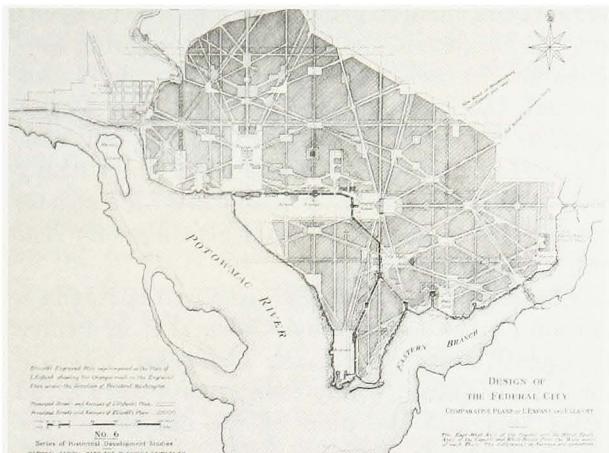
L'Enfant had also lost his city, and the penalties to him were heavy. The triumphant commissioners seized his papers. At Washington's command, Ellicott had begun to amend L'Enfant's draft of the city plan. Now the surveyor struck out the Frenchman's name and inscribed his own as prominently as if he were the author. L'Enfant's own pride increased the injury to his fortunes, for when Washington, and later Congress, offered to compensate him for his work, he indignantly refused their offers. With the passage of time, his own demands became increasingly fanciful, eventually reaching \$95,500, and as a result he was never paid at all.

28 Ltr, L'Enfant to Washington, 6 Feb 1792, in *ibid.*, 133.

29 Quotes from *ibid.*, 151-52.

30 (1) Quote from ltr, L'Enfant to Proprietors, 1 Apr 1792, *ibid.*, 181. (2) Ltr, Jefferson to Johnson, 8 Mar 1792, in Padover,

Worse still was the effect on L'Enfant himself. In the years that followed, his impracticality and love of magnificence darkened into a veritable *folie de grandeur*. Alexander Hamilton, who



Ellicott's Revision of L'Enfant's Plan.

admired L'Enfant, suggested he design an industrial town planned at Paterson, New Jersey, by the Society for Establishing Useful Manufactures. Again the Frenchman's ideas proved fitter for Versailles than for the struggling United States, and in June 1793 the directors of the Society removed him, stating that their funds were inadequate to support the expense his plans entailed.³¹

Next he undertook to build a house in Philadelphia for the financier Robert Morris, but spent so much in rebuilding and adorning it that Morris exclaimed, "Had you executed my intentions instead of your own, my family would now have inhabited the House instead of being liable to be turned out of Doors." When land speculation bankrupted Morris, the great house, heavily laden with marble, still stood incomplete — "Morris's Folly" to the Philadelphians. To an English traveler it was "a huge mass of red brick and pale blue marble, which bids defiance to simplicity and elegance."³²

In after years, L'Enfant suffered greatly from poverty. Though he worked for the War Department on fortifications at Fort Mifflin on the Delaware River, he refused a teaching post at West Point which Secretary of State James Monroe urged upon him as "an honorable station and support." Instead, he asked for work on harbors and fortifications, and in 1814 Monroe — now Secretary of War — instructed him to direct the rebuilding of Fort Washington on the Potomac, recently destroyed in battle. This was his last project. In 1815, his friend Thomas A.

Jefferson and the National Capital, 79.

31 Caemmerer, *Life of L'Enfant*, 222, 229, 249-54.

32 (1) Quotes from *ibid.*, 259-60, 263. (2) See also Tindall, *Standard History*, 144.

Digges took him into his home at Warburton Manor near the fort. L'Enfant lived with Digges and his nephew, William Dudley Digges, for the remainder of his life. As he aged, the feeling that he had been cheated grew upon him, and he spent most of his time in the Capitol, buttonholing congressmen to seek a settlement of his old claims against the government. For years he was a familiar figure in the city, a tall, thin old man, wrapped in a blue military coat, carrying a heavy hickory cane with a silver head. Under his arm he bore a roll of papers filled with his claims for real and imagined damages.

He died on 14 June 1825, and was buried in a garden on the farm called Green Hill in Prince Georges County, Maryland. The grave was unmarked. L'Enfant's only monuments were a red cedar tree and the plan of the capital of the United States.³³

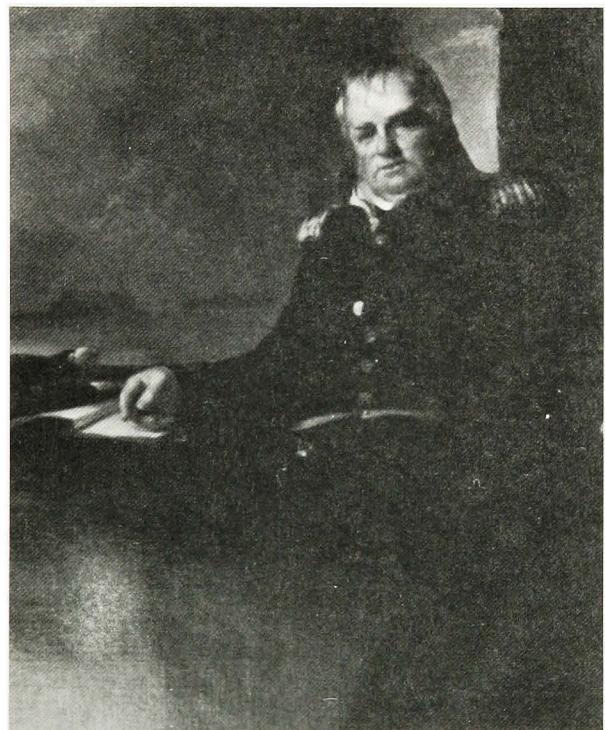
33 Summary and quote from Caemmerer, *Life of L'Enfant*, 269, 270-73, 281, 293.

Chapter II

Magnificent Intentions

L'Enfant's twilight years covered an extraordinary period in the history of his longtime concerns, the Army Engineers and the city of Washington. The Corps was reborn; the city was conquered, partly burned by the English, and rebuilt. By the year of his death, the Engineers had constructed the first permanent defenses of the capital, and done their first work on its public buildings as well.

This time of rapid change opened in 1802, when President Thomas Jefferson persuaded Congress to re-establish the Corps and create a national military academy at West Point. From the beginning, the two were closely linked. Like Washington, Jefferson wished to establish a national university, but decided that a military school might be a politically acceptable first step.¹ In the President's view, the Corps, staffing the nation's first school of engineering, might have more than military duties. Poor in science but rich in resources, the United States might in the future look to its Army Engineers for development as well as defense.



Col. Jonathan Williams, by Thomas Sully.

1 (1) 2 Stat. 137. (2) Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1957), 198-99. (3) Joseph Hobson Harrison, Jr., "The Internal Improvement Issue in the Politics of the Union, 1783-1825," Unpub. Doctoral Dissert., University of Virginia, 1954, pp. 163-64, 215-16. (4) Stephen E. Ambrose, *Duty, Honor, Country: A History of West Point* (Baltimore: The Johns Hopkins University Press, 1966), 18-19, 21-22.

Jefferson's choice of a Chief Engineer emphasized the unusual nature of the Corps. As American minister to France, Jefferson in 1785 had met Jonathan Williams, grandnephew of Benjamin Franklin. Later, in Philadelphia, Jefferson and Williams disagreed on the structural soundness of a prize-winning plan for the Capitol. But basically the Virginian respected Williams as a man of character, and as a fellow savant, for Williams served as vice-president of the American Philosophical Society and contributed to the society's *Transactions*. By choosing the newly commissioned Williams — until 1801 a civilian with limited military experience — to head West Point and the Corps, Jefferson indicated that the Army Engineers would be educators and builders as well soldiers.² In time, both the military and the civil functions of the Corps would be called into play in the Federal City.

But defense came first. In 1794, when war with France threatened, George Washington, concerned for his new capital, chose a "bluff on the eastern side" of the Potomac called Diggles's Point for a fortification.³ But it was not until 1807, when England was the prospective enemy, that a British attack on an American frigate in coastal waters prodded the government into action. On 31 October the Secretary of War ordered Jonathan Williams to the capital to draw plans for defending American ports and harbors. Williams was also to re-examine the site at Diggles's Point. Arriving in 1808, the Chief Engineer noted that the bluff commanded the river but was overlooked by higher ridges. However, the government purchased land for the fort and ordered George Bomford — then an Engineer captain — to lay out a fortification at the site.

By midsummer Bomford reported that a work called Fort Warburton was "in a condition of forwardness." On 1 December 1809 it was "Compleated, to placing the merlons of sod on the parapet."⁴ By this time it had been renamed Fort Washington. A water battery and little more, the work had semi-elliptical face and circular flanks, mounted 13 guns and enclosed quarters for two ordnance companies. Atop the bluff was an octagonal brick citadel — an ineffective defense against attack from the land, in the opinion of

2 Ltr, Jefferson to Washington, 17 Jul 1793, in Padover, *Jefferson and the National Capital*, 185-86.

3 Ltr, Knox to Rivardi, 12 May 1794, in 16 *American State Papers* 93.

4 (1) Quotes from ltr, SW to Bomford, 11 Apr 1808, and rpt, Bomford to SW, 1 Dec 1809; both in NA, RG 77, Buell Collection, Nos. 156 and 231. Hereinafter cited in the form Buell 156, 231. (2) Ltr, SW to Jon. Williams, 31 Oct 1807, Buell 124; 25 Jan 1808, Buell 133. (3) Rpt, Williams to SW, 6 Feb 1808, Buell 137.

the Army's senior general James Wilkinson, who declared that "being calculated against musketry only, [it] could have been knocked flat by a twelve pounder."⁵



View of the Suburbs of the City of Washington, Early Nineteenth Century.

Unfortunately for the city, this was not the only false start the government made. In the civil field as well, its treatment of the new capital was indifferent and neglectful. In December 1800 federal officials had moved from the amenities of Philadelphia to the wilderness on the Potomac. Their discomfort found an outlet in scorn for the new capital. "Both melancholy and ludicrous," said a Representative in 1800, "a city in ruins." "The people are poor," sneered a cabinet member, "and as far as I can judge, they live like fishes, by eating each other."⁶ In 1801 Albert Gallatin arrived in the city and noted with dismay that "seven or eight boardinghouses, one tailor, one shoemaker, one printer, a washing-woman, a grocery shop, a pamphlet and stationery shop, a small dry-goods shop, and an oyster house" comprised "the whole of the Federal city as connected with the Capitol."⁷

Only federal money joined to federal skill could make a city of this curious jumble, but lawmakers feared to offend voters and limited spending in the District strictly to national purposes. Between 1800 and 1810 they appropriated over \$500,000, but spent almost all of it for construction and improvement of government buildings.⁸ The rest of the city, with its network of streets and nontaxable federal reservations, was left to shift for itself. In consequence, the grandeur of L'Enfant's plan overwhelmed the small poor community of 350-odd taxpayers. Grotesque contrasts resulted. In 1804 visiting poet Tom Moore mocked

⁵ Quoted in Amy Cheney Clinton, "Historic Fort Washington," *Maryland Historical Magazine*, XXXII (Sept. 1931), 237.

⁶ Quotes in Green, *Washington, Village and Capital, 1800-1878* (Princeton: Princeton University Press, 1962), 20, 23.

⁷ Ltr, Gallatin to his wife, 15 Jan 1801, in Henry Adams, *The Life of Albert Gallatin* (New York: Peter Smith, 1943), 252.

This embryo capital, where fancy sees Squares in morasses, obelisks in trees; Which second-sighted seers e'en now adorn With shrines unbuilt and sages yet unvorn Though now but woods — and Jefferson — they see Where streets should run and sages ought to be.

Temples rose among primeval swamps. Visitors searching for government buildings lost their way in deep woods. Lawmakers worked amid marble but lived in boardinghouses. Inhabitants lacked the money to build a city, and the power to appeal to Congress. "Every member [of Congress] takes care of the needs of his constituents," wrote a resident in 1815, "but we are the constituents of no one."⁹

The War of 1812 revealed at least the military weaknesses of the capital city. In the second year of fighting, threats of attack gathered as a British fleet menaced the Chesapeake. Orders were given to repair Fort Washington along lines suggested by L'Enfant, for its "incompetency . . . and the necessity of its improvement, were then seen . . ." But little could be accomplished. On 25 July 1814, Major Decius Wadsworth, a former Engineer who would become Chief of Ordnance, reported, "The whole original design is bad, and it is therefore impossible to make a perfect work of it by any alterations."¹⁰

Time was growing short. On 24 August a British force defeated the Americans at Bladensburg, and pushed on to capture Washington and burn the public buildings. Meanwhile, a squadron of the British fleet worked slowly up the Potomac, maneuvering through a maze of shoals and unknown currents against contrary winds. On the evening of 27 August the invaders bombarded the fort for two hours. To their amazement, they saw the garrison retire. A thunderous explosion followed as artillery Capt. Samuel T. Dyson ordered the 3,346 pounds of powder in the magazine blown up — an action for which he would later be court-martialed and dismissed from the service. Returning Americans found their capital's single important defensive work in ruins.¹¹

Secretary of War James Monroe chose Pierre L'Enfant to rebuild the fort. The aging planner supervised the necessary demolition and cleared the site of debris. But when he failed to present a plan for a new fortress, the government on 17

⁸ See 2 Stat. 55, 105, 117, 176, 195, 236, 265, 311, 346, 350, 384, 399, 432, 462, 499, 520, 533, 537, 552.

⁹ Quotes in Green, *Washington, Village and Capital*, 39, 66.

¹⁰ 16 American State Papers 545, 580.

¹¹ (1) Walter Lord, *The Dawn's Early Light* (New York: W.W. Norton & Company, Inc., 1972), 197. (2) 16 American State Papers 588-89.

August 1815 replaced him with Engineer Lt. Col. Walker K. Armistead. Construction now got under way in professional style, the new Chief Engineer Col. Joseph G. Swift urging Armistead, "let us have [it] done for posterity, or not at all."¹² The government purchased more land, expanding the original reservation of 3.75 acres to 52. On this spacious site, Armistead erected an irregular bastioned work with a perimeter of 835 yards, "exceedingly strong . . . built of the most durable materials, and executed in the best manner."¹³ The new fort would serve in the Civil War and survive as a permanent landmark of the Washington area.

But the Engineers did more than build fortifications. On 15 March 1815 Chief Engineer Swift and Lt. Col. George Bomford examined the fire-blackened walls of the Capitol — "the vandalic ruin of 1814," Swift called it — to determine whether they could be used again. As reconstruction began under architect Benjamin M. Latrobe, the two officers accompanied President James Madison to the Bresica quarries on the Potomac and chose stone for the House wing. When Swift left Washington to return to his Brooklyn headquarters, he took with him Latrobe's plan for the colonnade of the Senate chamber. In New York he hired a craftsman to carve the marble, then shipped the finished work back to Washington. He also recruited workmen for other tasks, purchased materials, and supervised some work in the shops of the metropolis. In the rebuilding of the Capitol, Swift and Bomford — a former Engineer destined, like Wadsworth, to become Chief of Ordnance — demonstrated that the Army's newly acquired engineering skills could contribute much to the Federal City.¹⁴

Also important to the Engineers' future prospects was the transfer of their headquarters to Washington. In October 1817, James Monroe, now President, appointed a South Carolinian, John C. Calhoun, as Secretary of War. A gifted administrator with his eye on the White House, Calhoun was determined to create a better Army. Among other reforms, he ordered Chief Engineer Swift to Washington, declaring that "he should

12 (1) Quote from ltr, 19 Oct 1815, Buell 598. (2) See also Caemmerer, *Life of L'Enfant*, 276-77; and ltrs, Armistead to SW, 27 July 1815 and Graham to Armistead, 17 Aug 1815 and 6 Sept 1815, Buell 571, 569, 586.

13 17 *American State Papers* 567, 835.

14 (1) Quote from Joseph G. Swift, *The Memoirs of Gen. Joseph Gardner Swift, LL.D., U.S.A.* (n.p.: Privately printed, 1890), 149-50. (2) Ltr, Commissioners to Swift, 10 Feb 1819, in Letters Sent by Commissioners Appointed to Supervise the Repair or Rebuilding of the Public Buildings, NA, RG 42, pp. 283-84.

15 Quote from Russell F. Weigley, *History of the United States Army* (New York: The MacMillan Company, 1967), 134-35.

16 (1) Quote from Swift, *Memoirs*, 168, 173. (2) Garry D. Ryan,

be stationed at the seat of Government, to superintend, under its immediate control, the great and important duties assigned to the corps."¹⁵ November found Swift packing for the move from Brooklyn, and on 1 April 1818 he was in "my office in Washington City . . ." Calhoun also fostered the growth of the Topographical Engineers, which Congress had set up in 1813 and attached to the general staff.¹⁶ He appointed Col. Isaac Roberdeau, L'Enfant's onetime assistant, to head the "Topogs" under direction of the Chief Engineer. Like Swift, Roberdeau became a familiar figure in Washington — perhaps, because of his imposing presence and rare personal warmth, better known than the Chief Engineer. Calhoun took Roberdeau on inspection trips, and John Quincy Adams, a fellow savant, spent "many hours discussing astronomy and other sciences" with him.¹⁷

The presence of such men in the capital was important both for the Engineers and the city. In 1822 Roberdeau directed one of the earliest local Engineer civil works, installing cast iron pipes to bring water from a spring on K Street to the White House.¹⁸ Beyond contributing their specific services, the Engineers strengthened the government's tiny scientific community. And they would be at hand, professionally trained and responsive to orders, as the nation began in earnest to improve the impoverished Federal City.

Residents had long hoped that Washington's growth into a commercial city would solve the problem of local poverty. But instead signs of economic decline increased. Alexandria, a thriving seaport during the 18th century, had begun to slip during the first decades of the 19th, in part because the original Long Bridge closed off the Potomac's inshore channel. Georgetown, fronting on a silt-laden river, also faced decay. "Our town," reported the city corporation in 1826, "despite its local and natural advantages for trade, has been gradually declining; our population is diminished; our houses untenanted; and the people earnestly pleading that the avenues of commerce may be opened."¹⁹

"War Department Topographical Bureau, 1831-1863: An Administrative History," Unpub. Doctoral Dissert., American University, 1968, pp. 13-16.

17 (1) Quote from Ryan, "War Department Topographical Bureau," 40. (2) See also Roberdeau Buchanan, *Genealogy of the Roberdeau Family* (Washington: Joseph L. Pearson, 1876), 110.

18 (1) Ryan, "War Department Topographical Bureau," 42-43. (2) Tindall, *Standard History*, 331.

19 (1) Quote in Green, *Washington, Village and Capital*, 114. (2) Walter S. Sanderlin, *The Great National Project: A History of the Chesapeake and Ohio Canal* (Baltimore: The Johns Hopkins University Press, 1946), 179-80.



The Anacostia River in 1839.

Important projects had disappointed their backers. In 1810 - 15 a chartered company built a canal connecting the Potomac with the Anacostia. Hopes were high for the canal's commercial success, but the waterway quickly silted up. By 1818 the middle section held only a few inches of water and was usable only at high tide. In the 1820's local capitalists made a bold bid to recapture prosperity by winning a share of the western trade. On 4 July 1828 construction began on the Chesapeake and Ohio Canal — the same day that neighboring Baltimore began work on the Baltimore & Ohio Railroad. Lack of capital, technical problems, and competition from the railroad combined with local politics to make the canal venture less successful than its backers had hoped. The 1830's saw the District towns, burdened by canal bonds, drift close to bankruptcy. Where Washington and Jefferson had hoped to see a great port, little remained but an economic backwater.²⁰

Faced with these unwelcome changes — and the growing needs of the government — Congress took a bolder line in local spending. In 1830 a civil engineer employed by the Topogs made a pioneer study of Washington springs, to find water for the Capitol and the executive offices. Two years later Congress voted \$45,700 to pipe in the water. Meantime, a House committee studied various plans for paving Pennsylvania Avenue, and in 1833 lawmakers gave \$115,000 to the commissioner of public buildings for this major improvement. In 1833 the lawmakers voted money to enable the city of Washington to complete its purchase of the Washington Canal Company. Three years later the government assumed the debts of Washington, Georgetown, and Alex-

andria for the C&O Canal. A sympathetic committee under Sen. Samuel L. Southard of New Jersey reported on the burdens imposed on local towns by the government's presence, and recommended larger federal contributions. While the report signaled a new federal concern, it did not become a blueprint for action. Yet the government had begun to realize that it could not ignore the economic weakness of the communities in which it existed.²¹

Federal bridge building likewise aided the local economy. In 1833 - 34 George W. Hughes, a West Point-educated civil engineer who would later become a distinguished Topog officer, carried out major repairs on the Long Bridge. Authorized in 1808, the bridge had been built by a chartered company. For decades it served as Washington's lifeline to the south, the region from which the city drew most of its supplies. In 1831 a freshet swept away part of the wooden superstructure, leaving the stone piers in place. Two years later Congress bought the bridge and turned over the job of rebuilding to the Treasury. Hughes was the superintending engineer. A traffic count for October 1834 testified to the importance of the reconstructed span, as 3,700 foot passengers, 1,200 horses, 700 cattle, 300 hogs, 200 stage coaches, 400 carriages, and 2,500 miscellaneous vehicles — carryalls, gigs, wagons, drays, and carts — streamed across the Potomac.²²

Of almost equal importance was the Aqueduct Bridge at Georgetown, which provided still another link to the Virginia shore. Congress had already invested \$1 million in the C&O Canal when, in 1831, the Alexandria Canal Company began to construct a branch south of the Potomac. Congress put \$400,000 into this venture, and Topog Capt. William Turnbull constructed an aqueduct — essentially a wooden trough on massive stone piers — to carry the canal across the river. After building cofferdams to hold out the river, Turnbull laid the foundations of the piers on bedrock, noting that the sight "of men busily at work so far below the surface of the river, seemed to interest the public exceedingly." Completed in 1835, the Aqueduct like the Long Bridge demonstrated the increased scope of federal contributions to the local economy.²³

Nor did the government ignore the need of

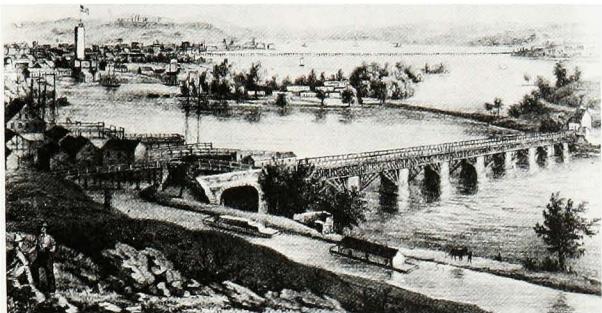
23d Cong., 2d sess. (1834), 2-6.

23 (1) Quote from *Alexandria Aqueduct*, H. Doc. 261, 24th Cong., 1st sess. (1836), 19. (2) Letter . . . *Transmitting Captain Turnbull's Report . . .*, H. Doc. 459, 25th Cong., 2d sess. (1836). (3) Sanderlin, *Great National Project*, 59-60. (4) Green, *Washington, Village and Capital*, 114-16, 180-81. (5) Ltr, Abert to Turnbull, 29 Aug 1832, Topographical Bureau, Ltrs Sent, NA RG 77.

20 (1) Sanderlin, *Great National Project*, 46, 284-88; Green, *Washington, Village and Capital*, 112.

21 (1) *Public Improvements in Washington*, H. Rept. 291, 22d Cong., 1st sess. (1832), 2-3, 18. (2) *Pennsylvania Avenue*, H. Docs. 19 and 24, 23d Cong., 1st sess. (1833). (3) 4 Stat. 518, 651, 701, 727; 5 Stat. 31. (4) Green, *Washington, Village and Capital*, 127-32.

22 *Bridge Across the Potomac*, H. Rept. 264, 23d Cong., 1st sess. (1834); H. Doc. 374, 23d Cong., 1st sess. (1834); H. Doc. 12,



Aqueduct Bridge in 1865.

the growing federal establishment for office space, though a crime triggered action and produced a decade of building. In 1833 an arsonist burned the Treasury, and architect Robert Mills designed a new building which began to rise in 1837 on land just east of the White House. In 1836 the Post Office burned; architect Thomas U. Walter designed a new one for the site at 7th and E Northwest. In the next square north, construction began the same year on William P. Elliot's design for the Patent Office. The government also contributed to the building of the Alexandria Courthouse, and President Martin Van Buren instructed the Secretaries of State, War, and the Treasury to supervise the work.²⁴

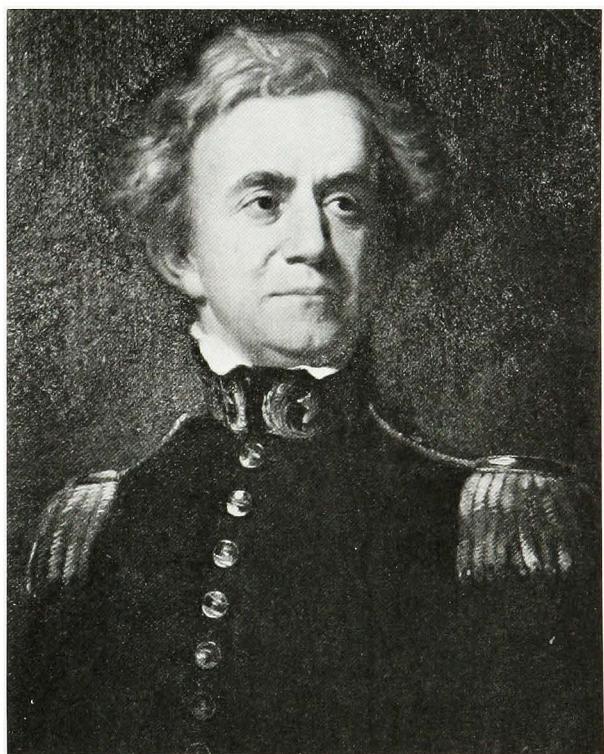
Government action broadened in the 1840's. Congress assumed a modest welfare burden by contributing to the care of lunatics and paupers. It also provided for an auxiliary watch that later evolved into the Municipal Police. At the same time, lawmakers improved the city by authorizing gaslight in the Capitol and its grounds, improvements of streets other than Pennsylvania Avenue, and installation of a sewer. As federal construction work grew, Army Engineers increasingly supplied the skills that made its accomplishment possible. A young lieutenant, Andrew A. Humphreys, superintended construction of a bridge over Rock Creek, and spent the summer of 1843 determining the grades of Washington streets. Hughes and Topog Capt. Campbell Graham repaired Pennsylvania Avenue, directed the paving of 15th and 17th Streets, and constructed the 15th Street sewer. The two worked with Mills on plans for the new War Department building, and Humphreys collaborated with architect William Strickland to design a new hall for the House of Representatives. In these projects, the Topogs staged a dress rehearsal for later Engineer construction work in the capital.²⁵

24 (1) Green, *Washington, Village and Capital*, 136-37. (2) 5 Stat. 114, 163, 421.

25 (1) 5 Stat. 421, 439, 462, 511; 9 Stat. 207, 284, 354. (2) *Report of the Commissioner of Public Buildings*, H. Doc. 52, 28th Cong., 1st sess. (1844), 3. (3) *Monthly Returns of the Corps of Topographical Engineers*, Mar. 1841-Dec. 1843; Jun.-Jul. 1843;

Yet full participation was delayed another decade. The Topogs had been separated from the Corps of Engineers in 1831, and throughout the next two decades the activities of the parent branch were largely confined to military construction. The Corps could not help to build the city, but the presence of its headquarters made it a significant element in Washington's intellectual life. A key figure in the Corps' growing prestige and in its later role in public building was Col. Joseph G. Totten, appointed Chief Engineer in December 1838.

Genial and courteous, a skilled soldier, and a scientist whose interests ranged from seashells to ballistics, Totten found full scope for his talents in the nation's capital. A friend of powerful men, he joined John Quincy Adams, Joel R. Poinsett, and Chief Topographical Engineer Lt. Col. John J. Abert in 1840 to found the National Institution for the Promotion of Science. Besides collecting scientific specimens, the group was interested in securing for the nation a fortune left by an Englishman, James Smithson, "to found at Washington . . . an establishment for the increase and diffusion of knowledge among men." When in 1846 Congress created the Smithsonian Institution, the law provided that two members of

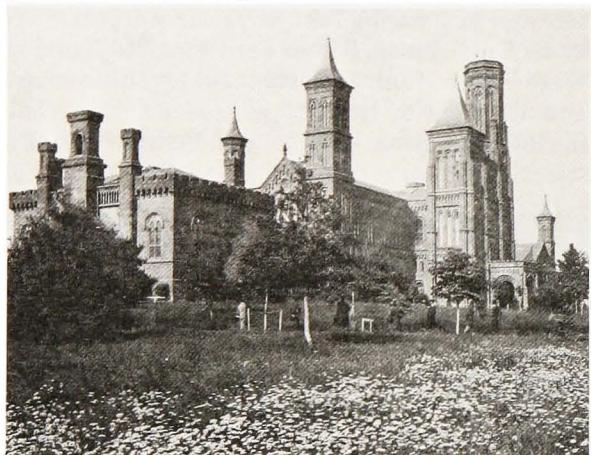


Brevet Maj. Gen. Joseph G. Totten, by Robert W. Weir.

Apr. 1845-Aug. 1846; Mar. 1847-Oct. 1847; Aug. 1848-July 1849. All in NA, RG 77. (4) Register of Letters Received by the Topographical Bureau, 1849; rpt, Mills to SW, 20 Dec 1841, and ltr, Strickland to Abert, 6 Dec 1843, in Letters Received by the Topographical Bureau. All in NA, RG 77. (5) *Alteration of the Capitol*, H. Doc. 51, 28th Cong., 1st sess. (1844), 11-14.

the board of regents must be members of the National Institution. One of those chosen was Totten.²⁶

The Smithsonian soon made use of Totten's professional knowledge. In the fall of 1846 he visited the nation's principal cities to interview architects and collect samples of stone. From thirteen building plans submitted to them, Totten's committee chose one by James Renwick for a castle in the 12th-century Norman style. Totten also served on the building committee, which selected materials, let contracts, and supervised construction. Elected in 1846 to the Smithsonian's executive committee, Totten was from the beginning a member of the group "in which the government [of the Institution] substantially exists." He continued to win reelection each year until his death in 1864. In 1853 he assigned Engineer Lt. Barton S. Alexander as architect of the Smithsonian. In this capacity Alexander fire-proofed the building.²⁷



The Smithsonian in the Mid-Nineteenth Century.

But to the Chief Engineer the Smithsonian was more than a construction job. Joseph Henry, the Institution's secretary and dominant spirit, was a frequent visitor to Totten's cheerful home. With Alexander D. Bache, head of the United States Coast Survey, he enjoyed the Engineer's gift for combining sociability with science. The flavor of their relationship pervaded a note that Totten sent Henry on 1 February 1850 regarding the "sherry-cobbler-freezing experiment":

26 (1) Monthly Returns of the Corps of Engineers, Dec. 1838, and Nov. 1853, NA, RG 77. (2) Material relating to National Institute and Smithsonian, unless otherwise cited, from Williams Jones Rhees, *The Smithsonian Institution: Documents Relative to Its Origins and History, 1835-1899* (Washington, 1901), I, 217, 295, 1011. (3) Quote from *Encyclopedia Britannica* (Chicago, London, Toronto: William Benton, 1959), XX, 839. (4) 9 Stat. 102. See also A. Hunter Dupree, *Science in the Federal Government* (Cambridge: The Belknap Press, 1957), 70-90.

27 (1) *Report from the Board of Regents*, S. Doc. 211, 29th Cong., 2d sess. (1847), 6, 8, 17. (2) S. Misc. Doc. 28, 30th Cong., 1st sess. (1848), 4-14. (3) Quote from Rhees, *Smithsonian In-*

I remember [he wrote] when I first introduced the experiment to your notice, & that your friend Dr. Bache . . . remarked that we, perhaps, formed a freezing mixture, by the union of wine & ice. I had lately, at dinner, a pleasant proof that this happens. The atmosphere being humid, there was a copious deposit of dew on the outside of my tumbler, then filled with pounded ice, wine & negus in agreeable combination, and delightfully cold — the dew froze immediately into a notable crust, which was felt & scraped by many fingers at the table. Assuming that we have a freezing mixture in the tumbler, the solution of the problem seems to me very simple. Namely, that the warm spoon melting the ice in contact with it, the film of water thus produced & surrounded as it is by a freezing mixture of which the low temperature is instantly communicated to the spoon & is at once congealed . . .²⁸

Professionally and personally close, Totten, Henry, and Bache assisted one another. All three served the Smithsonian and the Light House Board. Engineer officers worked regularly for the Coast Survey. Corps and Topog officers made scientific observations and forwarded information and specimens to the Smithsonian. Henry supplied Totten with foreign scientific publications. The tiny federal scientific establishment was close-knit, with much trading of manpower and information. Under Totten, the Corps of Engineers was an important part of a system that enabled a few men to accomplish much.²⁹

After the Mexican War broke out in 1846, Totten won new honors by directing the successful siege of Vera Cruz and serving as commissioner in the surrender of the city.³⁰ Returning to Washington in 1848, he found the nation undergoing far-reaching changes. Victory over Mexico had won an imperial realm, and a consciousness of new power — as well as grave new problems — pervaded the country. Debate over the extension of slavery shook the foundations of the republic. But in 1850 compromise apparently solved the question, and generated a mood of optimism which was reflected in the field of public works. In Washington, Congress began to build on an entirely new scale, pouring into the Dis-

stitution, 567. (4) *Journal of the Proceedings of the Regents of the Smithsonian Institution at the City of Washington* (Washington, 1846), 7, and *Annual Report of the Board of Regents of the Smithsonian Institution for the Year 1864* (Washington, 1865), 13.

28 Ltr, Totten to Henry, 1 Feb 1850, in Joseph Henry Papers, Incoming and Outgoing, 1825-1878, Box 4, Smithsonian Institution Archives.

29 Ltrs. Totten to Benham, 10 Nov 1854; Totten to Henry, 9 Apr 1853, 15 Apr 1853, and 11 Nov 1854. All in Misc Ltrs Sent, CE, XVIII, 58, 63, 459-60, NA, RG 77.

30 *Annual Report of the Board of Regents of the Smithsonian for the Year 1864* (Washington, 1865), 155.

trict more than ten times as much money as in the preceding decade. Totten was in a superb position to argue the Corps's case for a share of this work.

For the Topogs had begun to decline. Colonel Abert, his judgment no longer as shrewd as in times past, alienated successive secretaries of war. Totten moved deliberately to gain more civil works for the Corps. At the same time he strengthened his relationship with the Whig administrations of Zachary Taylor and Millard Fillmore. Himself a Whig, Totten ventured to recommend appointments in the diplomatic service and the Patent Office as well as the Army. As demands for new construction rose in Congress, Fillmore turned to Totten for advice.³¹

Even before the Mexican War, lawmakers in the House had recognized the need for an enlarged Capitol. Their investigations had also shown that many executive agencies were housed with their irreplaceable records in firetrap buildings. In 1845 a House committee recommended extension of the Capitol, a fireproof War and Navy building, and expansion of the Treasury, Pension, and Post Office. But the war and the sectional crisis delayed action until 1850. Then at last Congress voted \$100,000 to extend the Capitol. Congress also confronted the long-standing problem of the city's water supply by voting \$500 for a War Department survey to locate the best sources. President Fillmore strongly endorsed such a policy, declaring in his first annual message that "nothing could contribute more to the health, comfort and safety of the city and the security of the public buildings and records than an abundant supply of pure water . . ." Here were two important initiatives, but at first neither project was given to the Corps of Engineers. A design competition was launched for the Capitol extension, and the survey of water sources was undertaken by Capt. George W. Hughes of the Topogs.³²

Then a series of unexpected events took place. On 1 August 1851 Hughes resigned his commission and retired to his estate in Maryland. The Topogs had lost a member distinguished for

31 (1) Ltrs, Totten to Fillmore, 12 Apr 1851, 22 Nov 1850; to Taylor, 25 Feb 1850. In Letters of Joseph Totten, NA, RG 77. (2) On Topogs, see Ryan, "War Department Topographical Bureau," 169, 177, 190-91.

32 (1) Quote from James D. Richardson, *A Compilation of the Messages and Papers of the Presidents, 1789-1908* (n.p.: Bureau of National Literature and Art, 1908), V, 92. (2) *Public Buildings*, H. Rept. 20, 28th Cong., 2d sess. (1844) and H. Rept. 89, 28th Cong., 2d sess. (1845). (3) *National Edifices at Washington*, H. Rept. 185, 28th Cong., 2d sess. (1845). (4) 9 Stat. 523.

33 (1) Monthly Returns, TE, May 1851; ltrs, Hughes to Abert, 1 August 1851, Ltrs, Received, TE; Totten to W.W. Corcoran, 12 August 1852, and to Secretary of the Interior H.H. Steward, 14 Aug 1852, Letters of Joseph Totten; Totten to Fillmore, [14&] Sept 1852, Ltrs Sent, CE. All in NA, RG 77. (2) Ltr,

his achievements in the Federal City. In December a fire broke out in the Capitol, destroyed the library and threatened the wooden dome. The following summer, Congress voted \$5,000 for "surveys and estimates of the best means for affording the cities of Washington and Georgetown an unfailing and abundant supply of good and wholesome water." This bill was prepared by Fillmore's Secretary of the Interior, assisted by local banker William W. Corcoran and by Colonel Totten. Shortly afterward, Fillmore assigned the survey to the Corps.³³

Totten quickly turned the job over to Capt. Frederick A. Smith, his long-time deputy, only to lose this valued officer when he died one month later. Casting about for a successor, Totten in October picked a young lieutenant, Montgomery C. Meigs.³⁴

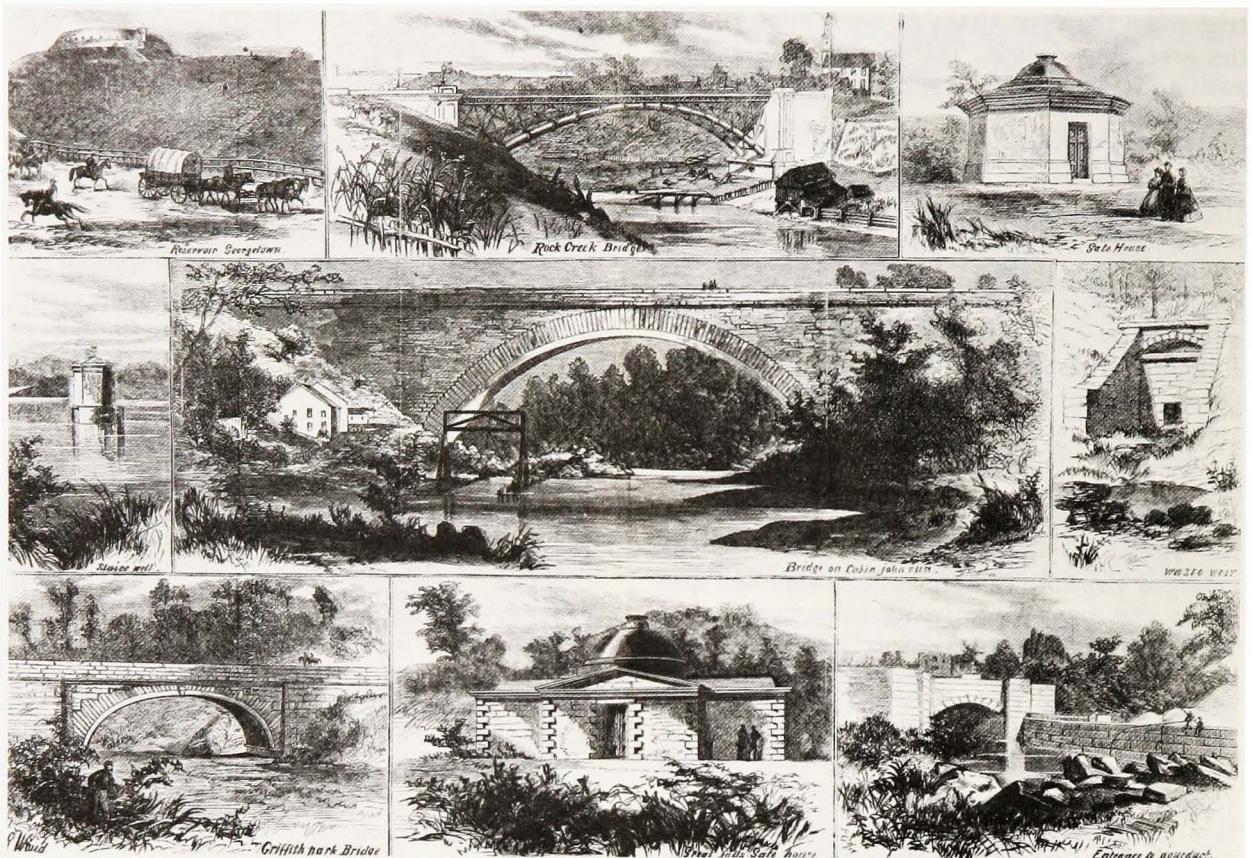
For three months, Meigs surveyed the countryside northwest of Washington and worked on his report. He proposed that the city draw its water supply either from Rock Creek or from the falls of the Potomac. Using Great Falls would entail the greatest engineering effort, cost the most money, and produce the largest and most reliable supply. Though Hughes had recommended Rock Creek, Meigs preferred an aqueduct capable of serving a growing city for centuries to come. Though his plan was extravagant for the little capital of the 1850's, Meigs, like L'Enfant before him, had been caught by a vision. "Let our aqueduct be worthy of the nation," he wrote. "Let us show that the rulers chosen by the people are not less careful of the safety, health, and beauty of their Capital than emperors [of Rome] . . ."³⁵

Meigs showed his mettle during debate in Congress, lobbying so successfully that grateful District residents gave him a silver water kettle to symbolize his victory. When Congress asked the President to choose among the three alternatives Meigs had suggested, newly inaugurated Franklin Pierce quickly chose the Great Falls plan. On 29 March 1853 Jefferson Davis, Secretary of War and strong man of the new cabinet, chose Meigs — scion of a prominent Democratic family — to head the project. A new demonstra-

Fillmore to Totten, 13 Sep 1852, in Richardson, *Messages and Papers*, V, 162. (3) Quote from 10 Stat. 76.

34 (1) Ltr, Totten to Smith, 15 Sept 1852, Ltrs Sent, CE, and Monthly Returns, CE, Oct 1852, both in NA, RG 77. (2) On background and selection of Meigs, see Russell F. Weigley, *Quartermaster General of the Union Army A Biography of M.C. Meigs* (New York: Columbia University Press, 1959), 13-30, 49, 52, 59.

35 (1) Quote from Weigley, *QM General of the Union Army*, 61. (2) Warren T. Hannum, "Water Supply of the District of Columbia," *Professional Memoirs, Corps of Engineers, U.S. Army*, IV (1912), 226. (3) Edwin A. Schmitt and Philip O. Macqueen, "Washington Aqueduct," *The Military Engineer*, XLI (1949), 205.



Views of the Aqueduct, 1864.

tion of his individual style followed. Meigs refused to give bond, telling Davis: "The security of an Engineer officer's commission and character [is] better than the bond of a civil agent." A new force had arrived on the Washington scene.³⁶

Over the decade that followed, Meigs directed the building of a dependable water supply system marked by touches of striking originality. The main conduit was a circular masonry tunnel nine feet in diameter and 9.1 miles long. Two reservoirs, one at the District border and one just west of Georgetown, provided reception, storage, and sedimentation. From Georgetown, cast iron mains carried the water to the capital.

Underground work was craftsmanlike and durable; that aboveground was graceful and bold. Meigs built classical temples to hide the machinery and serve as gate houses. At Cabin John Run, he adopted a design prepared by his gifted assistant, Alfred L. Rives, and spanned the deep ravine with the longest ashlar masonry arch in the world. He carried the Aqueduct across Rock

36 (1) Quote from ltr, Meigs to Davis, 18 Apr 1853. (2) See also ltr, same to same, 22 Feb 1855. Both in Box 2, Series 276, NA, RG 77. (3) Weigley, *QM General of the Union Army*, 62.

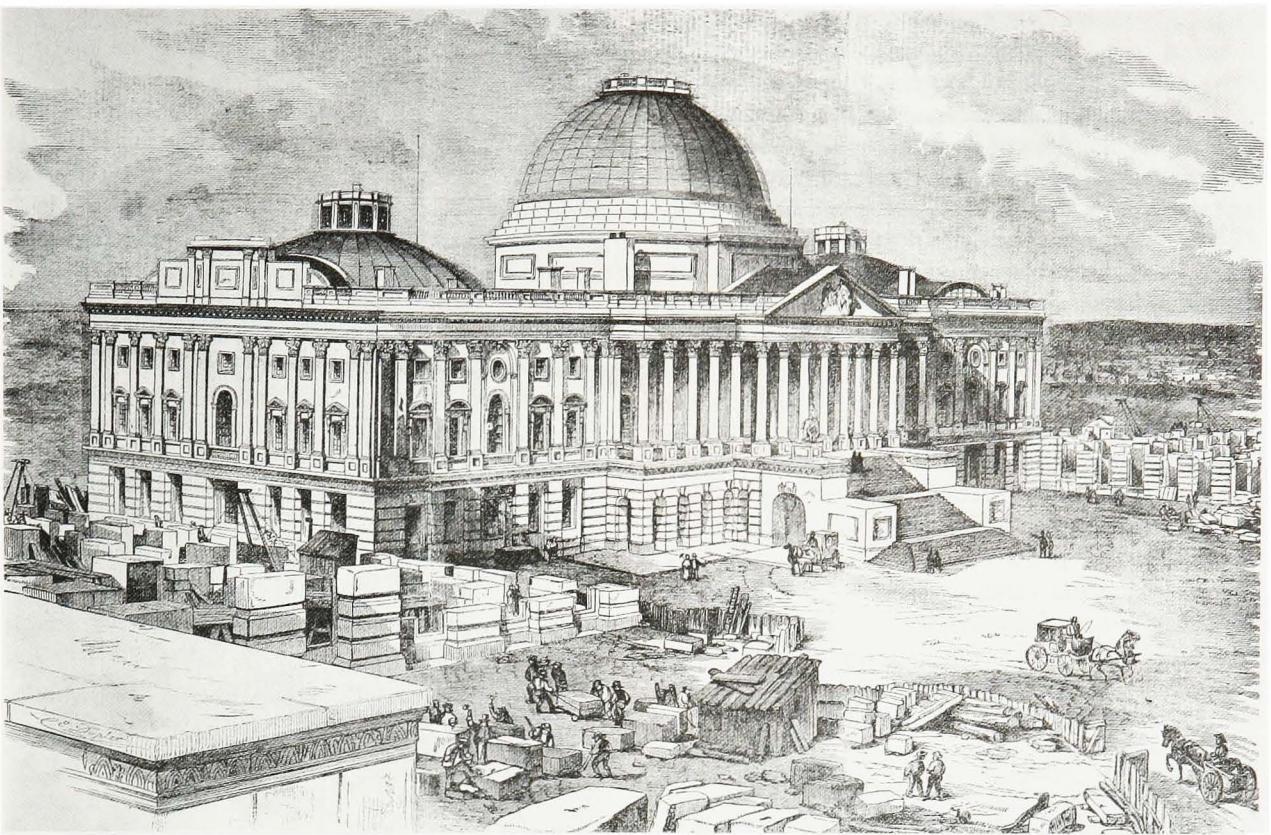
37 (1) William T.S. Curtis, "Cabin John Bridge," *Records of the Columbia Historical Society*, II (1899), 295-96. (2) Harold K. Skramstad, "The Engineer as Architect in Washington: The



Cabin John Bridge Under Construction.

Creek by an ingenious bridge in which two 48-inch cast iron tubes served both as supporting arches and as water mains. The structure carried both the city's water supply and the traffic of Pennsylvania Avenue on its way to and from Georgetown. Throughout its length, the Aqueduct bore the marks of an original engineering mind.³⁷

Contribution of Montgomery Meigs,"*Records of the Columbia Historical Society*, LXIX-LXX (1969-1970), 268. (3) Philip Q. Macqueen, "Cabin John Bridge," *The Military Engineer*, XXIV (1932), 566-68, and "Rock Creek Bridge," *The Military Engineer*, XXVIII (1936), 111-18.



Construction Begins on the Capitol Wings, 1853.

It also bore Meigs's name, for vanity was no small foible of his. It was not surprising that the workforce of 700 free and slave laborers received no memorial. Meigs did order the names of his assistants — Alfred Rives, W. H. Bryant, C. Crozel, C. G. Talcott, and W. R. Hutton — engraved on stone tablets, though Rives's name, like that of Secretary Davis, was later erased when he joined the Confederacy. But Meigs saw the Aqueduct largely as a memorial to himself. Over the whole fourteen miles of construction, he had his name engraved on bridges, gate houses, pipes, staircases in pipe vaults, even on the derricks and hoisting gear. No one then or later would forget that the project was his.³⁸

And yet, domineering as he often was, Meigs had another and deeper side, humble and prayerful, which he hid from the world but revealed to his family and his diary. In 1855, after Congress had approved a new appropriation for the Aqueduct, he wrote in his journal:

God grant to me a grateful heart . . . being an humble instrument in his hand for the outpouring of this great blessing. One that does not stop in the brief space of one mortal life, but flowing on down the long stream of time will . . . carry life, health, comfort, and happiness, making more healthful the

³⁸ (1) Schmitt and Macqueen, "Washington Aqueduct," 205-06. (2) Report of the Secretary of War, S. Ex. Doc. 11, 35th Cong., 1st Sess. (1857), III, 26.

dwelling of the poor, more grateful the heart of the humble as of the high.³⁹

Meigs saw the Aqueduct in romantic terms, and enshrined his feeling in the little temples and soaring arches that brought Washington the "health, comfort, and happiness" of flowing water.

While still at work on the Aqueduct, Meigs began to reconstruct the Capitol. In 1851 architect Thomas U. Walter had won a competition held to choose the best design, but his skill at the drawing board exceeded his gift for handling public money under pressure from none too scrupulous contractors. A congressional investigation absolved him of personal wrongdoing, but in 1853 the lawmakers directed that all future disbursements be made through an agent chosen by the President. On 29 March — the same day he chose Meigs for the Aqueduct — Pierce selected him to supervise the Capitol extension.

Determined to exercise his authority to the full, Meigs toured the principal auditoriums of the east coast with Joseph Henry and Alexander Bache. From the War Department library he borrowed a French treatise on heating, *The Builder's Guide*, and *The Student's Guide to the Practice of Measuring and Valuing Artificers' Works*. In-

³⁹ Quoted in Weigley, *QM General of the Union Army*, 63.

creasingly sure of his professional skill, he began to scrap parts of Walter's plan for ideas of his own. He substituted fire-proof materials for wood, and monoliths for sectional columns. He studied the problem of ventilating the House and Senate, and decided to place the chambers in the centers of their respective wings, surrounded with corridors, offices, and committee rooms. Since there would be no windows, Meigs lit the chambers with skylights, and ventilated them with engine-run circulating fans. Such plans seemed dangerously modern and peculiar, and congressional doubters compared his steam engine in the basement to Guy Fawkes's gunpowder in the cellars of Parliament. But Meigs shrugged off his critics, and continued to introduce advanced engineering ideas into the design of the Capitol.⁴⁰

His personal taste also shaped the building. Favoring rich and elaborate decor, he hired European craftsmen to fill the Capitol with frescoes, mosaic work, and many-colored marbles. He chose Constantino Brumidi to decorate the House



The President's Room, North Wing, Capitol Building.

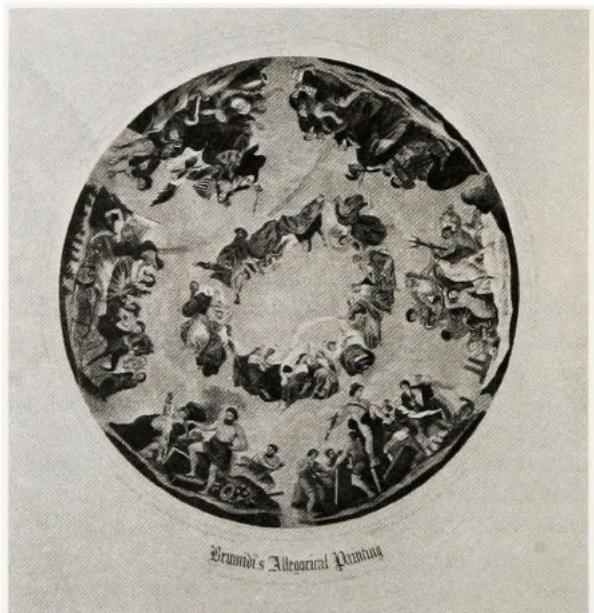
of Representatives. The gaudy result pained believers in the plain style. The Washington Art Society angrily denounced the foreign craftsmen who filled the Capitol with "decorative trash that would not be tolerated in a large bar saloon."⁴¹ In later years, Walt Whitman would declare that the building had "the richest and gayest and most un-American and inappropriate ornamenting" he had ever seen, and Mark Twain would call the frescoes Brumidi placed in the Dome "the delirium tremens of art." But Meigs ignored the opening guns of this barrage and shaped the

40 (1) Ltr, Meigs to Davis, 5 May 1853, NA, RG 77, Series 276, Box 2. (2) *Documentary History of the Construction and Development of the United States Capitol Building and Grounds*, H. Rept. 646, 58th Cong., 2d sess. (1904), 585, 612-13, 634-35, 657-59. (3) Glenn Brown, *History of the United States Capitol*, S. Doc. 60, 56th Cong., 1st sess. (1902), II, 139. (4) Weigley, *QM General of the Union Army* 69. (5) 10 Stat. 146. 41 Quoted in Skramstad, "Engineer as Architect," 274.

42 (1) Russell F. Weigley, "Captain Meigs and the Artists of the Capitol: Federal Patronage of Art in the 1850's." *Records of the Columbia Historical Society*, LXIX-LXX (1969-1970), 285-305. (2) Edwin H. Miller, ed., *Walt Whitman: The Corres-*

Capitol "in such a manner that it [would] last for ages as a creditable monument of the State of the Arts at this time in this Country."⁴²

So successful was the Corps in carrying out Congress's building program in the capital that many other large projects, overshadowed by the Aqueduct and the Capitol extension, came into their hands. Meigs himself built new wings for the Post Office on E Street; Lt. Barton S. Alexander, already architect of the Smithsonian, supervised construction of the Soldier's Home; Capt. Alexander H. Bowman served as chief engineer of the construction bureau of the Treasury and superintending engineer of the extension of the Treasury Building. Meigs won well-deserved fame for two spectacular projects, but his virtuosity was not the whole story. The Corps itself rose to prominence in the civil construction field during the 1850's.⁴³



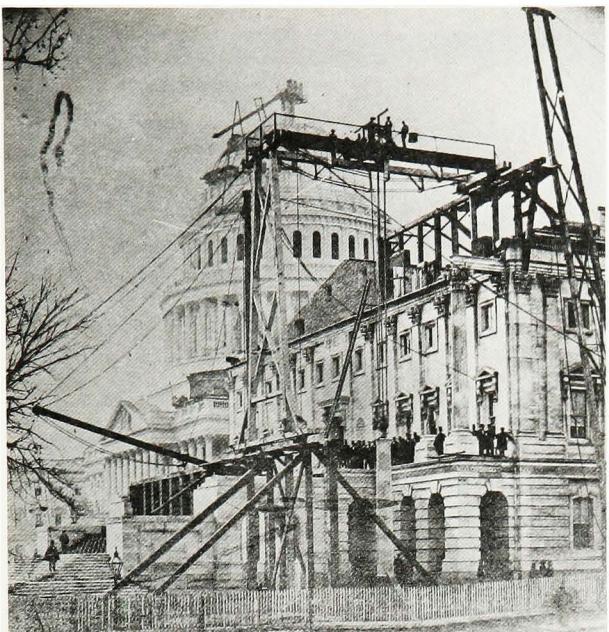
Brumidi's Allegorical Painting, Capitol Building.

Yet the crowning project fell to Meigs and Walter. Construction of the Capitol wings had made the little copper-covered dome look increasingly absurd. Walter drew plans for a new dome, and in March 1855 Congress voted \$100,000 to begin work. "In full and free consultation" Meigs and Walter prepared the working drawings.⁴⁴ They planned to build with cast iron, a

pondence, 1842-1867 (New York: New York University Press, 1961), I, 74-75. (3) Mark Twain and Charles Dudley Warner, *The Gilded Age, A Tale of Today* (Seattle and London: University of Washington Press, 1964), 166. (4) Ltr, Meigs to Davis, 11 Aug 1856, NA, RG 77, Series 276, Box 2.

43 (1) Weigley, *QM General of the Union Army*, 62, 76, 99. (2) Ltr, Alexander to Totten, 1 Apr 1853, Ltrs Received, CE, NA, RG 77. See also rpt, same to same, 2 Feb 1855. (3) Alexander H. Bowman biographical file, Engineer Historical Div. Topog Capt. William B. Franklin succeeded him in 1861.

44 (1) Rpt, Meigs to Davis, Sept 1855, NA, RG 77, Series 176, Box 2. (2) 10 Stat. 643.



The Senate Wing and Dome of the Capitol Under Construction.

material which architects were beginning to favor, since it was stronger, lighter, and more easily worked than stone. Meigs developed an innovative method of construction as well. Removing the old dome, he covered the Rotunda paintings with a plank gallery. In the center he built a wooden tower 100 feet high with an 80-foot derrick, and then erected the cast iron ribs of the dome without the elaborate scaffolding such work usually required. Over the ribs he bolted iron plates, which expanded and contracted as the temperature changed, "like the folding and unfolding of a lily, all moving together." To create the statue that would stand at the apex of the dome, Meigs chose the American sculptor Thomas Crawford. In planning and execution alike, the Capitol's new dome seemed likely to be another triumph.⁴⁵

But in March 1857 a new administration took office. Trouble quickly developed between Meigs and John B. Floyd, President James Buchanan's Secretary of War. Floyd looked upon public works as a source of patronage — a very common viewpoint then and later — and began hiring and firing Meigs' subordinates without consulting him. The secretary also wished to handle the letting of contracts in a casual, politicized way that Meigs would not tolerate. When the Engineer protested, Floyd, well aware of Meigs' standing with Congress, began a series of harassments. In 1859,

45 (1) Quote from Joseph West Moore, *Picturesque Washington* (Providence: J.A. & R.A. Reid, 1884), 81. (2) Weigley, *QM General of the Union Army*, 71-73.

46 (1) 12 Stat. 106. (2) Weigley, *QM General of the Union Army*, 96-98.

47 Sherrod E. East, "The Banishment of Captain Meigs," *Records of the Columbia Historical Society*, 1XL (1904), 121-22.

matters came to a head when Meigs wrote an untactful letter that gave Floyd an excuse to remove him from all his projects except the Aqueduct. Congress reacted angrily, requiring the 1861 Aqueduct appropriation to be spent "according to the plans and estimates of Captain Meigs, and under his superintendence." Floyd demanded that Meigs approve questionable expenditures. When Meigs refused, Floyd transferred him to Fort Jefferson in the Dry Tortugas and appointed Topog Capt. William B. Franklin in his place. Floyd's victory seemed to be complete.⁴⁶

Meigs went into exile warning that no money could be spent on the Aqueduct in his absence. From the remote Florida key he watched the coming of the Civil War, and soon found that he had a role to play in the struggle. As an Engineer, he grasped at once the importance of the forts on the southern coast, and set about energetically repairing Fort Jefferson and urging the Key West garrison to occupy nearby Fort Taylor. His pleas to Washington brought reinforcements in time to save both strong points from capture. In February 1861, four months after his exile began, Meigs was back in the capital, hailed by Unionists and thanked by Floyd's successor. Later he returned to Florida and helped save the Pensacola forts and make the Union strongpoints in the area impregnable. Back in Washington, he resumed work on the Aqueduct until the end of 1861, when President Abraham Lincoln named him Quartermaster General of the Army. Later generations best remembered him in that role, as a major architect of victory.⁴⁷

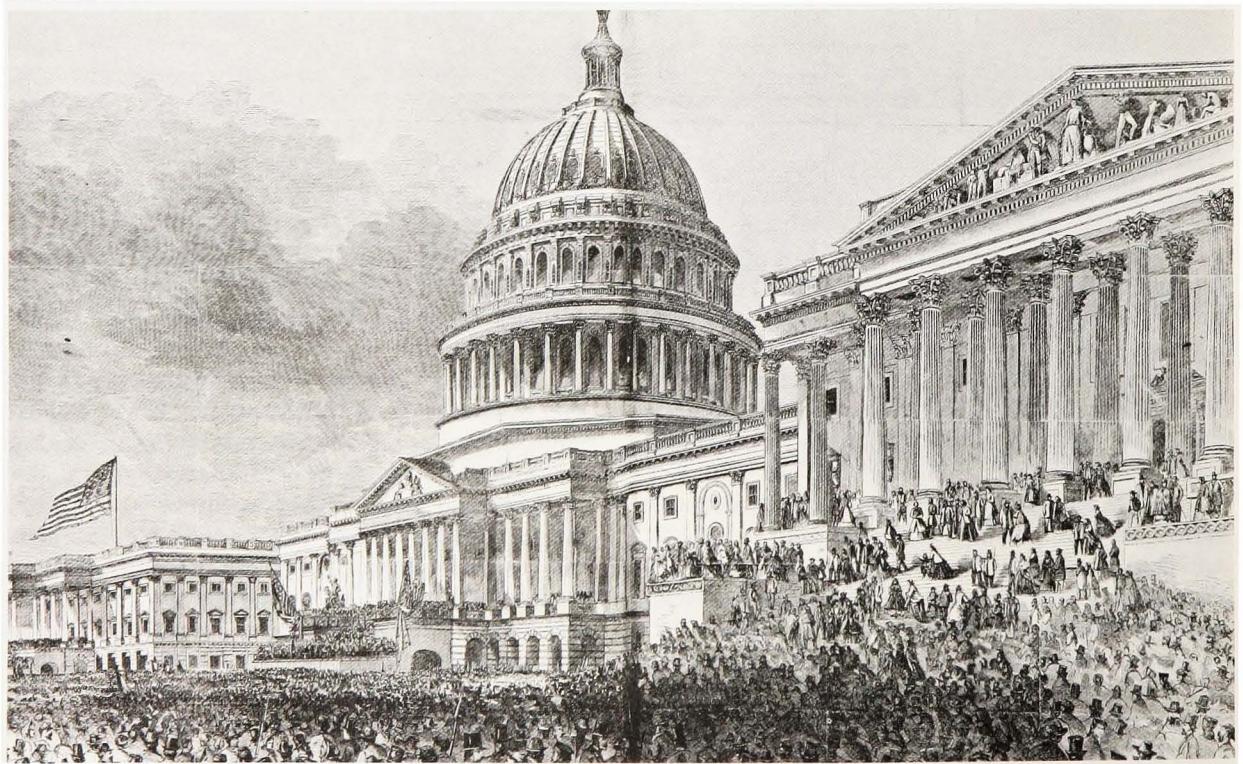
Other hands completed the Capitol's dome. Meigs suspended the project as not essential to the war effort, but President Lincoln overruled him, remarking that "if the people see the Capitol going on, it is a sign we intend the Union shall go on."⁴⁸ Through years of defeat followed by dawning victory the work continued. At length, on 2 December 1863, a crowd of thousands gathered to see the head and shoulders of Crawford's statue — prophetically called Armed Freedom — raised to the pinnacle of the dome. In twenty minutes the goddess stood complete. An American flag unfurled above her head, and a 35-gun salute roared back from the forts circling the city. The nation's symbol at last was a finished whole, though years of fighting remained before the reality of a divided nation would match the image.⁴⁹

48 Quoted in Margaret Leech, *Reveille in Washington* (New York, London: Harper Brothers, 1941), 279.

49 (1) *Documentary History of the Capital*, 693. (2) P.J. Strauderaus, ed., *Mr. Lincoln's Washington: Selections from the Writings of Noah Brooks, Civil War Correspondent* (New York, London: Thomas Yoseloff, c. 1967), 264-65.



Washington in 1861.



The New Capitol: Lincoln's Second Inaugural, 4 March 1865.

As the crowds dispersed that winter day to work, camp, or home, they moved through a transformed city. All could see the immediate changes brought by the war—the camps, hospitals, and fortifications swarming with blue-clothed soldiers. But under the confusion of war was the framework of a great city. Bridges, paved streets, the Aqueduct, and the government build-

ings would stand when the war was a memory.

In the Corps of Engineers the American people had found builders well able to improve the capital. Now these men were at war, setting up field fortifications, bridging rivers, and commanding divisions and armies. But when quiet times returned, the Engineers would take up again the work they had so skillfully advanced.

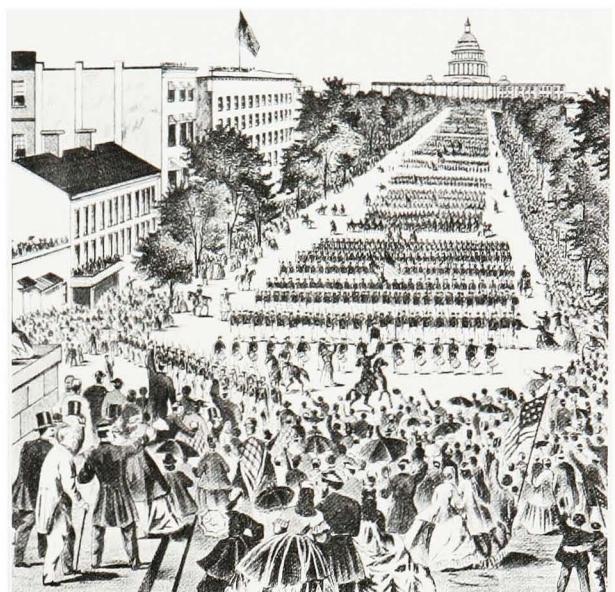
Chapter III

The Nation's City

On 23 May 1865 the people of Washington and thousands of visitors gathered in bright sunshine to watch the grand review of the triumphant Union armies. Symbols of mourning for President Lincoln had been taken down and the city was decked in flags and bunting. Led by the cavalry, the Army of the Potomac passed in review. With the Second Corps marched the Engineers. They had laid aside the rags and tatters of war for new uniforms, and short picket spades swung from their belts. Two mammoth ponton boats followed them. A watching *New York Times* reporter hailed the Engineer troops as

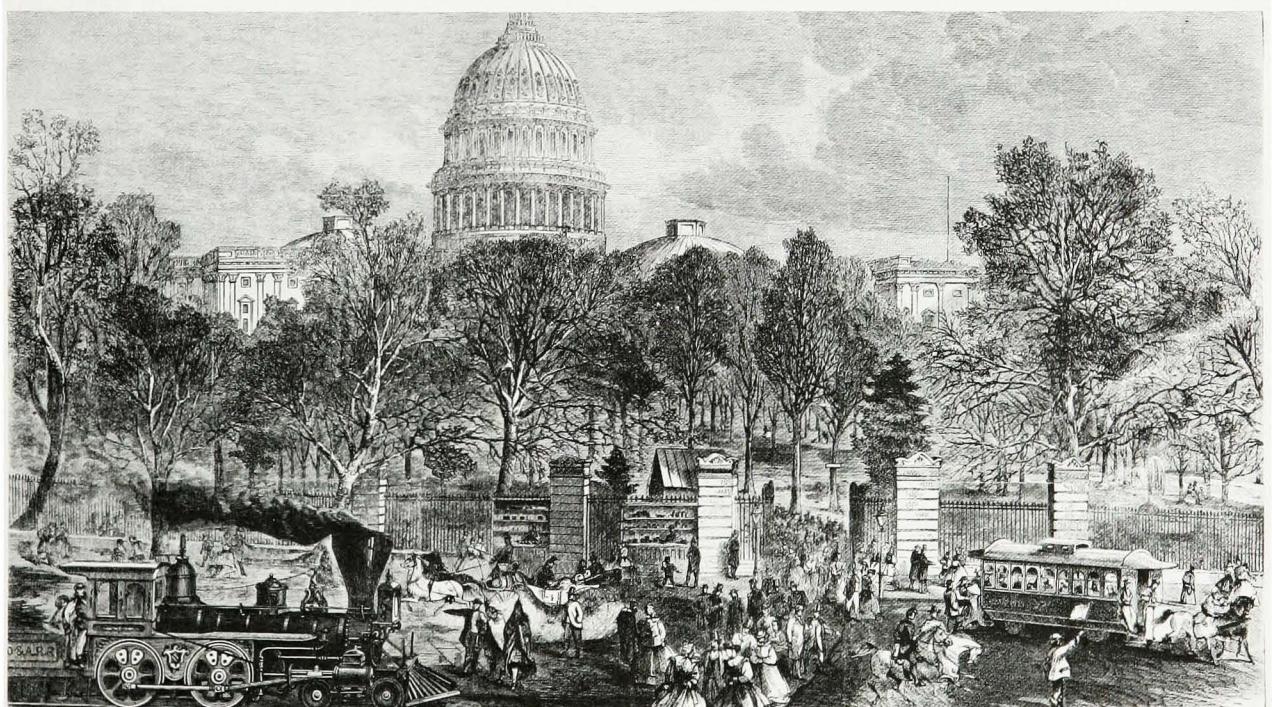
men to whose enduring valor and patience, under the most trying circumstances, we are indebted for many of our greatest victories. Twice or thrice, or even half a score of times, they have bridged every notable stream of water. So efficient have they become, that they can bridge such a stream as the Hudson in a few hours. The march ended, the soldiers of the Engineer Battalion went into quarters at the Navy Yard. Soon they would be turning their hands from the duties of the battlefield to those of peace.¹

Reunited in 1863 when the Topogs merged with the Corps, the Army Engineers now faced many peacetime challenges. The Federal City bulked large among them. Part country town,



The Grand Review, Pennsylvania Avenue, 23 May 1865.

part capital city, Washington promised much to its residents but provided little in necessary urban services. "Upon the whole," Walt Whitman had written during the war, "the city, the spaces, buildings, etc., make no unfit emblem of our country, so broadly planned, everything in plenty." Yet, he added, "the fruit of the plans, the knit, the combination is wanting . . . many a hiatus yet."²



The Railroad on the Mall, ca. 1866.

1 (1) Quote from the *New York Times*, May 24, 1865, p. 1. (2) Gilbert Thompson, *The Engineer Battalion in the Civil War*, Occasional Papers, Number 44, Engineer School, United

States Army (Washington: The Engineer School, 1910), 98.
2 Miller, *Walt Whitman*, 82.

Overburdening the local economy, L'Enfant's public reservations had been turned to other uses, or remained empty, weed-grown fields. Trains still clanged across the Mall. The Washington Monument stood incomplete, a bit southeast of the spot L'Enfant had chosen. Sloops and scows nosed along the Washington Canal beside North B Street — the future Constitution Avenue. Tiber Creek, the canal, and other streams were open sewers. Slash Run Swamp and Foggy Bottom were breeding grounds of malaria, and the Potomac Flats were a noisome marsh uncovered whenever the river fell. Cursed with slums — like Murder Bay near the canal where destitute blacks swarmed in a jumble of shanties — Washington in many ways remained a village where cattle, geese and chickens roamed at will. Streets deep in dust or mud according to the weather harbored a pungent population of swine, and a municipal official reported that one of his friends "upon his return from church on Sunday morning, found a 400 pound hog asleep in his front vestibule." The village past still clung to Washington; the urban future sometimes seemed unattainable.³

The sheer discomfort of the capital combined with memories of its Southern sympathies to convince many that it was no fit place for the government. "The rents are high," reported Horace Greeley, "the food is bad, the dust is disgusting, the mud is deep and the morals are deplorable."⁴ Midwestern states petitioned Congress to move the capital to America's heartland, the Mississippi Valley. A constituent urged an Illinois lawmaker to "knock down the filthy old crows nest and seek a clean tree for . . . our Eagle of Liberty" in the West. Reconstruction added a note of racial animosity to criticism of the city. In 1868 blacks voted for the first time in the Federal City. Local resistance to black voting angered congressional radicals, while conservatives were convinced that elections might now be decided by voters in Murder Bay. Both saw better conditions in the Midwest.⁵

Worried by the agitation to move the government, Washingtonians embarked on a new effort to re-create their city as a worthy national capital. Alexander R. Shepherd, a native Washingtonian, an alderman, a wealthy contractor, and a friend of President Grant, led local boosters who advocated a more active District

3. (1) Quote from William Tindall, "A Sketch of Alexander Robey Shepherd," *Records of the Columbia Historical Society*, XIV (1911), 56. (2) *Standard History*, 254-55. (3) Green, *Washington, Village and Capital*, 302.

4. Quoted in Green, *Washington, Village and Capital*, 312.

5. (1) Quote in Michael C. Robinson, "Illinois Politics in the Post-Civil War Era: The Liberal Republican Movement, A Test Case," Unpublished Ph.D. Dissertation, University of

government and a building program to make the city handsome and livable. Urged on by these forces, Congress on 21 February 1871 fused the District into a single national territory with an elected House of Delegates, and an appointed governor, council, and board of public works. President Grant chose as governor Henry D. Cooke, brother of banker Jay Cooke, whose name and connections would be useful in selling bonds.

But it was Shepherd who, from his place on the board of public works, emerged as the dominant figure in the District. In his three-year reign, the "Boss" paved over a hundred miles of streets, built sidewalks, set up thousands of streetlights, installed a sewer system, and covered the Washington Canal as far as 3d Street. But his pell-mell pace, ruthless treatment of property owners, and financial juggling brought the territorial government down in a major scandal. In the summer of 1873 the bankrupt District faced a major change in its political life.⁶

A quieter revolution was meanwhile taking place under federal authority. In 1866, the Corps returned to civil construction work as Brig. Gen. Andrew A. Humphreys, the Chief of Engineers, joined a board to plan improvement of the Washington and Georgetown harbors. In 1867 youthful Maj. John A. Tardy took charge of Fort Washington and the surveying of the Potomac. Work of a new character also began in 1867 when the Senate instructed Maj. Nathaniel Michler to survey possible sites for a public park, and a new location for the White House. Standing just above a "pestilential flat, on which a large portion of the sewerage of the city is cast to fester in the sun," the Executive Mansion was seldom inhabited in the summertime, and the lawmakers wished to find a healthier setting.⁷

Michler found some excellent sites for the Mansion, but paid most attention to the proposed park. He favored Rock Creek Valley, where he found "primeval forests and cultivated fields . . . rocks clothed with rich fern and mosses . . . repose and tranquility . . . light and shade." Though Michler urged the location on banker William Corcoran and other leading citizens of the District he could not get action on his proposal. Nevertheless, the Engineer established a reputation for special knowledge of Washington. When in 1867 lawmakers decided to remove the care of public buildings from a civilian commissioner

Wyoming, 1973, p. 274. (2) Green, *Washington, Village and Capital*, 300, 328.

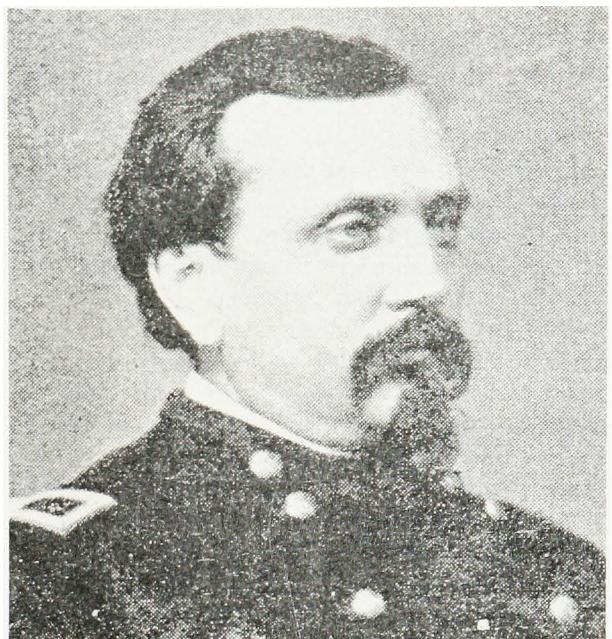
6. (1) Tindall, *Standard History*, 249-50, 255. (2) Green, *Washington, Village and Capital*, 357. (3) 16 Stat. 419.

7. (1) Quote in *Annual Report of the Board of Commissioners, District of Columbia* (1889), 266-67. (2) Monthly Returns of the Corps of Engineers, May 1867m NA, RG 77.

and set up the office of public buildings and grounds under the Corps of Engineers, General Humphreys appointed Michler as the logical man to fill the new post. Now the Corps began to take a hand in running the nation's capital.⁸

Michler had become chief maintenance man of federal buildings and landscape architect of the reservations. He purchased oil paintings for the White House, drew plans for the development of the Mall, lobbied for money to cover the polluted canal, began to beautify parks and squares, and managed a work force of watchmen, doorkeepers, clerks, and gardeners. In addition, he recommended ways to improve the Potomac, and urged construction of a new bridge across the Anacostia at the Navy Yard. A key figure in the emergence of the Corps' new role, Michler demonstrated that the Engineers had both technical and administrative skills to offer the Federal City.⁹

His successor carried on the work. Maj. Orville E. Babcock was a secretary and a close friend of President Grant — and a figure deeply mired in the scandals of the administration. He showed a different side of his character in his work for the nation's capital. In 1871 he took charge of both the federal reservations and the



Col. Orville E. Babcock.

Aqueduct, working effectively and without scandal. He began to build two bridges — the Chain Bridge over the Potomac and the Navy Yard Bridge across the Anacostia — and for a time superintended construction of the east wing of the State, War, and Navy Building.¹⁰



The State, War, and Navy Building Under Construction, 1866.

8 (1) Quote from *S. Doc. 21, 39th Cong., 2d sess. (1867)*, 6; *Annual Report of the Chief of Engineers, 1867*, 533. Hereinafter cited as ARCE. (2) Tindall, *Standard History*, 472. (3) 14 Stat. 457.

9 (1) *Survey of the Potomac River*, H. Ex. Doc. 292, 40th Cong., 2d sess. (1868). (2) Letter of the Secretary of War . . . relative

to the Navy Yard bridge . . . , S. Ex. Doc. 100, 41st Cong., 1st sess. (1869). (3) ARCE, 1867, 519-31.

10 (1) Matthew Josephson, *The Politicos, 1865-1869* (New York: Harcourt, Brace & World, n.d.), 120-21. (2) Monthly Returns, Jun 1872, Nov 1874, and May 1875, NA, RG 77.

Babcock also turned his attention to an eyesore afflicting the west end of the Mall, the unfinished stump of the Washington Monument. Around this testimonial to good intentions, pigs rooted and cattle grazed, while shacks and boat hulks rotted nearby at the river's edge. In 1872 Babcock began a cleanup of the grounds, and in a short time "brought them into civilization." Natural depressions were replaced by ornamental ponds and a fish hatchery called Babcock Lake. Drained, graded, its "great yawning gullies" filled, planted with trees, and surrounded by a broad carriage drive, the area became a respectable setting which invited completion of the Monument itself.¹¹

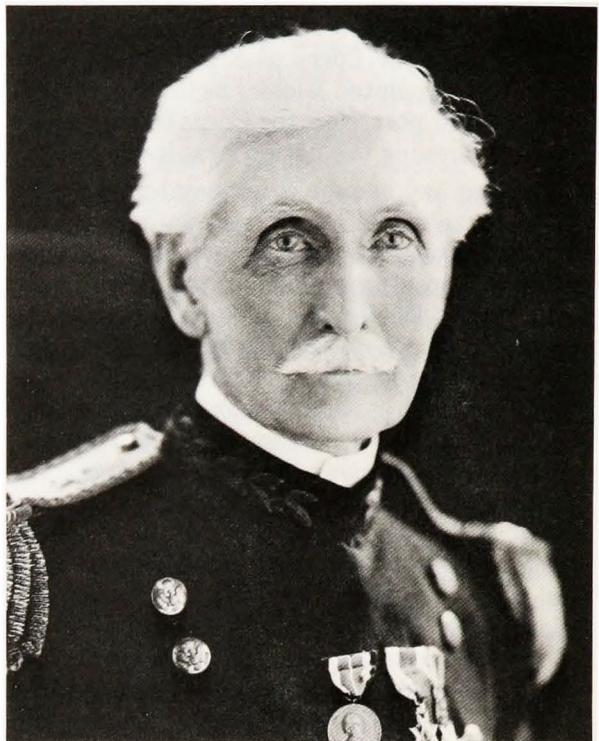
Babcock's energetic work beautified the whole city. Finding that the circles and squares where Washington's avenues met were largely a turf of weeds, mud, and shanty-towns, he declared his intention to make the "places of sand and mud" into sites that were "green and beautiful."¹² In his first year in office, Babcock's men laid 46,000 feet of sod, constructed 1,000 feet of curbing, 10,000 yards of pavement and walks, and put in four miles of drains. He improved the larger squares with iron fences, fountains, and trees, introduced gas to light the parks, piped in running water, and established a nursery for trees. He built little zoos, and, when he could not get public funds to feed the animals, dipped into his own pocket. The board of public works praised Babcock for his "cordial co-operation with local authorities, his wise counsel, energy, and ability." But while Babcock's success enhanced the image of the Corps, the board's maladministration led to a federal takeover of the city.¹³

In 1874 congressional investigators probed the board's work, discovering irregularities which led them to recommend a new government under three commissioners to be appointed by the President. To handle the repair and improvement of streets the committee recommended "an officer of the Engineer Corps of the Army, because . . . under such an officer, whatever work is done will be well done, and by an officer responsible to the executive and to Congress." The President chose another protege for the task — Lt. Richard L. Hoxie, a West Point friend of his son Frederick Grant.¹⁴

11 (1) George Alfred Townshend, *New Washington, or the Renovated City* (Washington: Chronicle Publishing Company, 1874), 16. (2) "Interview with Professor Baird," *Forest and Stream*, X (1878), 214. (3) See also Twain and Warner, *The Gilded Age*, 167.

12 ARCE, 1871, 969.

13 (1) Quote from *Report of the Board of Public Works of the District of Columbia from its Organization until November 1, 1872*, H. Ex. Doc. 1, 42d Cong., 3d sess. (1872), Pt. VI, 6. (2)



Brig. Gen. Richard L. Hoxie in Later Life.

While a special board of audit checked Shepherd's contracts, Hoxie, then 30 years old, struggled with the administrative chaos left by the former government. He found that necessary work had been done under the board of public works, and sometimes done well; most bad work could be traced to a single contractor. But the board's record-keeping was inept; plats of many improvements were not to be found; dishonest men had battened on the city without challenge. Paving carried out with wooden blocks had disintegrated under heavy traffic and the Washington rains. Concrete paving was often ill-made, some parts "rapidly disappearing in . . . dust" a few years after laying. Salvaging what he could and repairing work that was ill done, Hoxie brought order to Shepherd's domain. During 1876 - 1877 the repairing of Pennsylvania Avenue began under a board of two Engineers and the architect of the Capitol.¹⁵

Honesty and competence marked the Corps' work for the city, a fact which Congress duly noted. In June 1878, the lawmakers decided that the commission government should become permanent, and that one of the three should con-

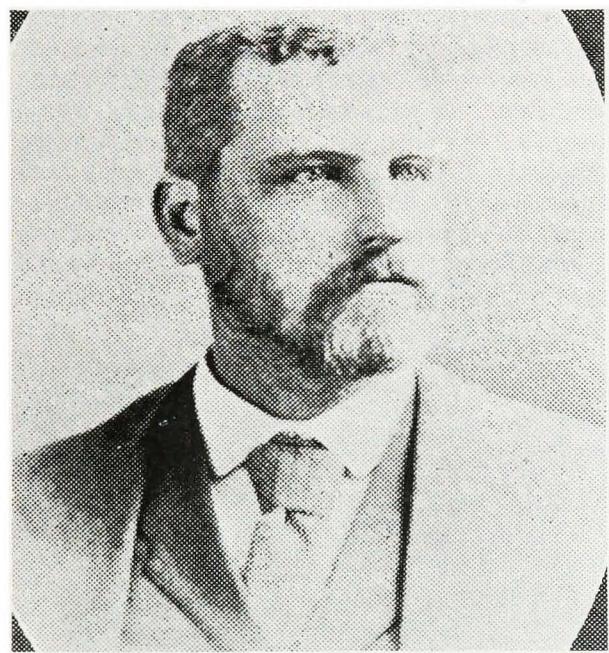
ARCE, 1871, 976ff; 1874, II, 1392; 1877, II, 1065.

14 (1) Quote in Tindall, *Standard History*, 269. (2) Green, *Washington, Village and Capital*, 360.-mc

15 (1) *Report of the Board of Commissioners of the District of Columbia for the Year 1875*, H. Ex. Doc. 1, 44th Cong., 1st sess. (1875), 232-56. (2) On Hoxie, see also Roland M. Brennen, "Brigadier General Richard L. Hoxie, United States Army, 1861-1930," *Records of the Columbia Historical Society*, LVII-LIX (1957-1959), 87-95.

tinue to be an officer of the Corps of Engineers. After many upheavals, Washingtonians largely acquiesced in the change. Blacks saw Congress as their protector, while white property owners noted Congress's apparent promise to pay half the expenses of the District and to underwrite the local debt. Local finances had failed at last under the strain of supporting Shepherd's building program, and the federal government had taken over the city. At the cost of the franchise, the District became the nation's city under the nation's care. As a direct result, the Army Engineers acquired an unprecedented role in the regular, peacetime government of an American city.¹⁶

On 27 June 1878 Chief of Engineers Humphreys detailed Maj. William J. Twining to serve as first Engineer commissioner, and Lts. Richard L. Hoxie and Francis V. Greene as his assistants. The thirty-nine year old Twining, after serving with distinction in the Civil War, had been an Engineer explorer in the Dakotas and chief astronomer with the commission that drew the Canadian-American boundary line.



Maj. William J. Twining.

Hoxie missed being appointed as Engineer commissioner when Democratic Congressmen questioned his association with former President Grant. Greene, also a veteran of the boundary

16 (1) Green, *Washington, Village and Capital*, 393; *Washington, Capital City, 1879-1950* (Princeton: Princeton University Press, 1963), 25. (2) James H. Whyte, *The Uncivil War: Washington during Reconstruction, 1865-1878* (New York: Twayne Publishers, 1958), 70-71, 83, 101-04. (3) 7 Cong. Rec. 1922, 2115 (1878). (4) 20 Stat. 103.

17 (1) William J. Twining and Richard L. Hoxie biographical files, EHD. (2) 7 Cong. Rec. 2532-34 (1878).

18 Green, *Washington, Capital City*, 36.

19 (1) Quote in Twain and Warner, *The Gilded Age*, 167. (2)

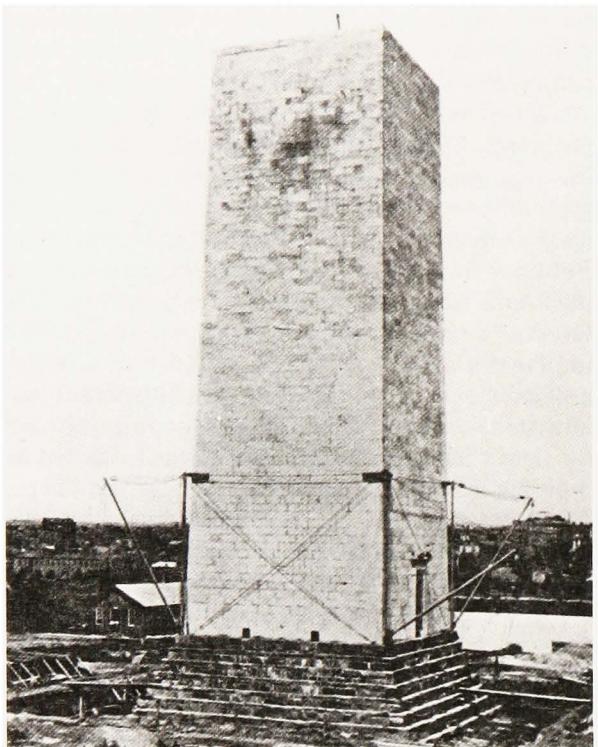
survey, later won distinction in both civil and military life. Able and imaginative, the three Engineers worked successfully as a team.¹⁷

Their work ranged over all the city's physical problems. Twining developed plans for increasing the water supply, extended the sewage system, paved many miles of streets, and urged upon Congress a plan for reclaiming the malarial Potomac flats. Hoxie developed a plan to create a park and reservoir on Rock Creek, and in 1879 Greene urged Congress to prevent further unplanned growth in the District by adopting a unified street plan. Humane and competent administration won Twining great popularity, and his death from overwork in 1882 was regarded as a public misfortune and grave loss to the Corps. President Chester A. Arthur, members of the cabinet, and lawmakers from both houses of Congress attended his funeral. A successful and durable government was his legacy. Twining's successors carried on his work, insuring that many of Washington's harassing physical problems — its filth, unpaved streets, and malarial lowlands — gradually came to an end.¹⁸

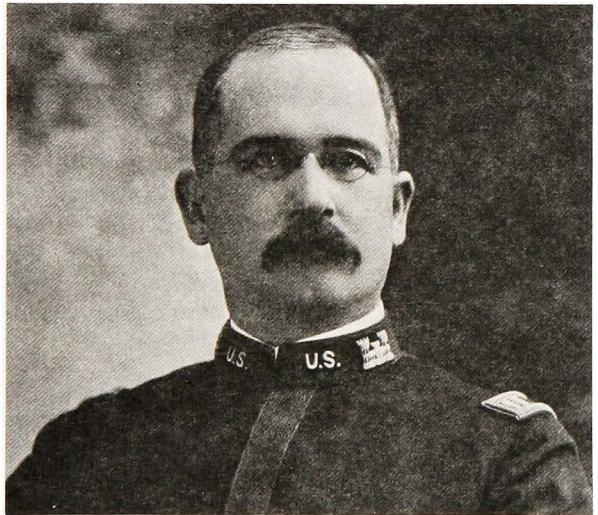
The Corps shouldered other municipal burdens. In 1875 the Washington Engineer district came into existence when the Chief's office chose civilian engineer Sylvanus T. Abert to undertake the improvement of the Potomac. Before the century ended, the four Engineer agencies in Washington — the district, the office of buildings and grounds, the Aqueduct, and the office of the Engineer commissioner — designed and built famous landmarks, helped create much of the city's park system, and revived L'Enfant's half-forgotten vision of the capital as a planned community.

Congress's decision to complete the long-unfinished monument to the city's founder was a visible symbol of the new federal commitment to Washington. Begun in 1848, Robert Mills's obelisk was constructed by the Washington National Monument Society with privately donated funds. These ran out in 1856. For twenty years the structure stood incomplete, mocked by Mark Twain as "the memorial Chimney" and "a factory chimney with the top broken off." Then came the national centennial, and on 2 August 1876 Congress voted \$200,000 to finish the monument.¹⁹

Ltrs, Jonathan B. Blake, Secretary to WNMS, to U.S. Grant, 31 May 1876; to William S. Holman, 15 July and 18 July 1876; to J.B.H. Smith, 27 July and 29 July 1876. All in Washington National Monument Society Letter Book, 1858-1877, NA, RG 42. (3) 19 Stat. 123. (4) See also: D.L. West, "Erection of the Washington Monument," *The Military Engineer*, XV (1923), 99-102; "George Washington's Monument," *American Heritage*, XX (1968), 68-73; H. Ex. Doc. 1, 45th Cong., 2d sess. (1877).



The Washington Monument in 1879.



Brig. Gen. Thomas L. Casey.

A board of three Corps officers examined Mills's foundation and discovered that it was unequal to the weight of the shaft. "If a becoming liberality among the people had enabled the Monument Association to complete its work upon the foundation it had established," remarked an Engineer, "something startling must have happened . . ." Lt. Col. Thomas L. Casey took on the

20 Quote from *Centennial of the United States Military Academy at West Point, New York 1802-1901* (Washington, 1904), 852-53.

21 "Memoir of Bernard Richardson Green," *Transactions of the American Society of Civil Engineers*, LXXX (Dec. 1916), 2151-56. Hereinafter cited as *Trans. ASCE*.

22 (1) Long quote in Ada Louise Huxtable, "The Washington Monument, 1836-1884," *Progressive Architecture*, XXXVIII

double task of strengthening the rubble masonry foundation and completing the monument. Assisting him were Capt. George W. Davis and Corps civilian Bernard R. Green.²⁰

Casey and Green had met during the Civil War, when they worked on fortifications on the coast of Maine. In 1877, when Casey took over the Office of Buildings and Grounds, he quickly brought his former associate to Washington.²¹ The two began work on the Monument by undermining the existing base, excavating narrow sections, and pouring a concrete skirt 13.5 feet thick and broad enough to increase the bearing surface from 6,400 to 16,000 square feet. With an adequate foundation, they shifted their attention to design. As planned by architect Mills, the 600-foot obelisk would have been surrounded by a colonnade with underground vaults for the bodies of national heroes. In answer to sharp criticism of this design, the Monument Society had scrapped the colonnade and lowered the height of the obelisk to 485 feet.

Casey now modified the design further. Writing to George Perkins Marsh, the American ambassador to Italy, he learned that the height of the classic obelisk was traditionally ten times the base line, and redesigned the monument for a height of 555 feet. His decision to preserve the simplicity of the "great abstraction" infuriated some members of the architectural establishment, admirers of gingerbread, who termed the result "one of the blankest, meanest, ugliest and most unmeaning piles that ever encumbered the globe."²²



Placing the Tip on the Washington Monument, 1884. Left, Bernard R. Green; Third from Right, Thomas L. Casey.

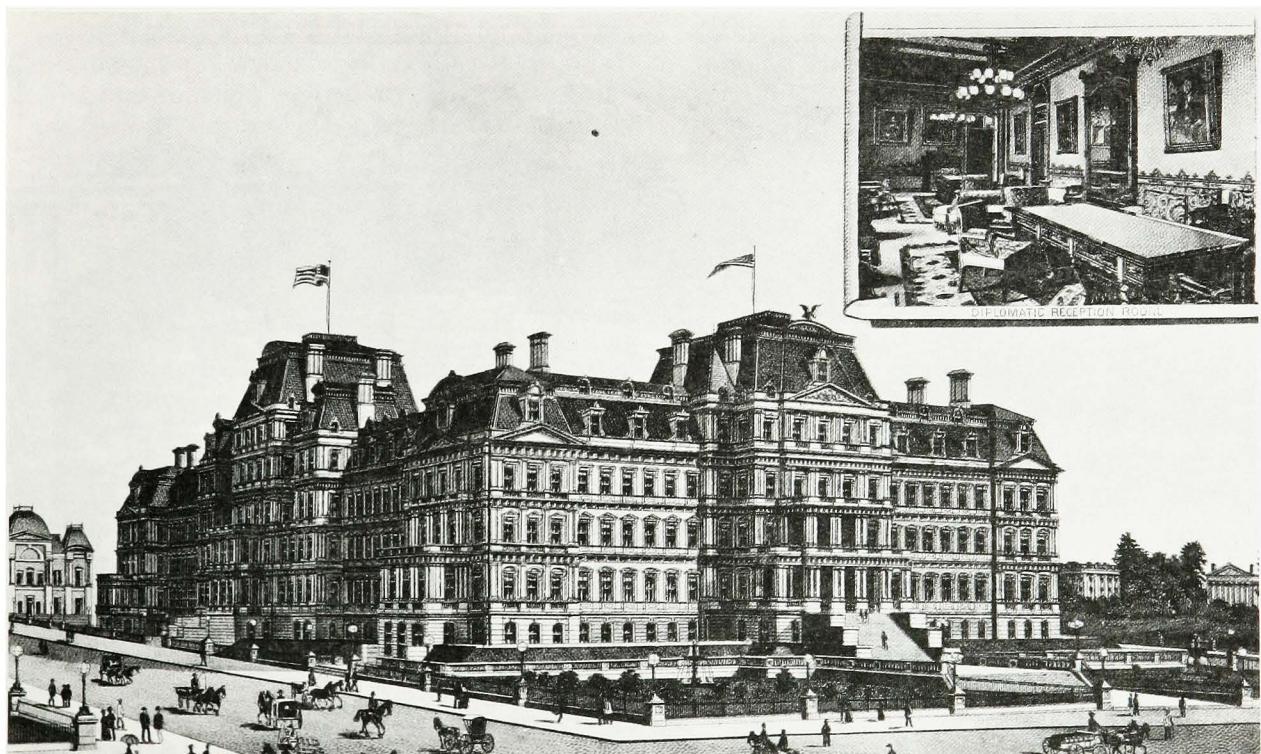
(1957), 141-44. (2) Phrase quoted from William Walton, *The Evidence of Washington* (Washington: Harper and Rowe, 1966), 29. (3) On design, see: ltr, Blake to Editors of *The American Architect*, 1 Jul 1876, WNMS Ltr Book, NA, Rg 42; Reps, *Monumental Washington*, 44. (4) See also Frederick Gutheim, "Who Designed the Washington Monument?" *Journal of the American Institute of Architects*, XV (1951), 136-42.

Ignoring such complaints, Casey pushed the work to its conclusion. On 6 December 1884, he joined Green and Davis on a wooden platform atop the completed structure. Bowing against a winter gale, the Engineers watched their foreman ceremoniously top the monument with a metal pyramid weighing 100 ounces — the biggest piece of aluminum yet cast. Engraved on it were the words, "Chief Engineer and Architect, Col. Thomas Lincoln Casey, Corps of Engineers."²³

In other projects Casey and Green helped to transform the face of official Washington. They completed the north wing of that "curious edifice," as U. S. Grant called it, the State, War and Navy Building. Despite the interior marble, the granite and bronze stairways, and the arched iron roof covered with copper, their work cost a third less than Babcock's east wing. In 1885 Casey started work on a brick-and-metal fireproof building on the Mall for the Army Medical School and the Surgeon General's records, library, and museum. Housed in the main building and two annexes, the Medical Museum of the Armed Forces was completed by Lt. Col. John M. Wilson in May 1888. During the same years Green constructed a series of new buildings at the Soldier's Home.²⁴

Casey and Green put their talents together again to complete a vast new building for the Library of Congress. "Crowded to repletion" with half a million books, the old library in the Capitol was in such condition that Congress bought land for a new building. Architects Paul Pelz and John L. Smithberger won a design competition with plans for a structure in the extravagant Italian Renaissance style. Green entered the work in 1888, and Casey took overall control later that same year. With Green in charge of construction and Casey's son, Edward P. Casey, supervising interior design, the building was completed in 1897, one year after Thomas L. Casey's death.²⁵

Many features of the building were contributed by the Engineers. The library itself was both a structure and a complex mechanism which permitted storage and retrieval of millions of volumes. Around the main reading room in the domed central rotunda, three main stacks, each nine tiers high, provided shelves for 1.8 million books, while an equal number could be stored elsewhere. Interior design showed a taste for richness and elaboration that outdid even Meigs's Capitol. A dazzling profusion of late-Victorian craftsmanship climaxed in the lobby and the 195-foot domed central reading room.



The State, War, and Navy Building in 1891.

23 Gutheim, "Who Designed the Washington Monument?" 136.

24 (1) Quote in Reps, *Monumental Washington*, 61. (2) Sackett L. Duryee, *The Corps of Engineers in the Nation's Capital, 1862-1952* (Washington: U.S. Army Engineer District, 1952),

31-32, 69-70. (3) ARCE, 1877, II, 1095-98.

25 (1) Quote in Moore, *Picturesque Washington*, 100. (2) *The New Library of Congress*, S. Rept. 105, 55th Cong., 1st sess. (1899). (3) "Memoir of Bernard Richardson Green," 2153. (4) Tindall, *Standard History*, 441.

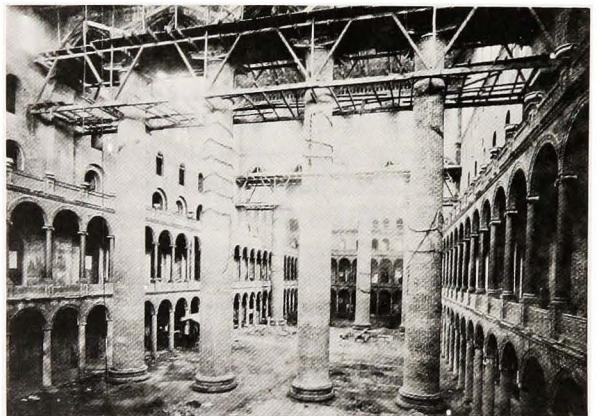


The Old Congressional Library.

Functional details reflected equal care. Green designed a system for delivering books by pneumatic tubes and dumbwaiters hitched to endless sprocket chains. Similar tubes moved books to and fro in a tunnel connecting the library to the Capitol. Fireproofing was total — stacks were iron, marble and glass; door and window frames, casings and baseboards were cast-iron or marble. Light flooded in through 2,200 windows, and at night the building's own power plant provided illumination. Under the marble and mosaics the library was built to work. It was an Engineer's building.²⁶

While Casey and Green emerged as major builders of the post-Civil War capital, the Army's

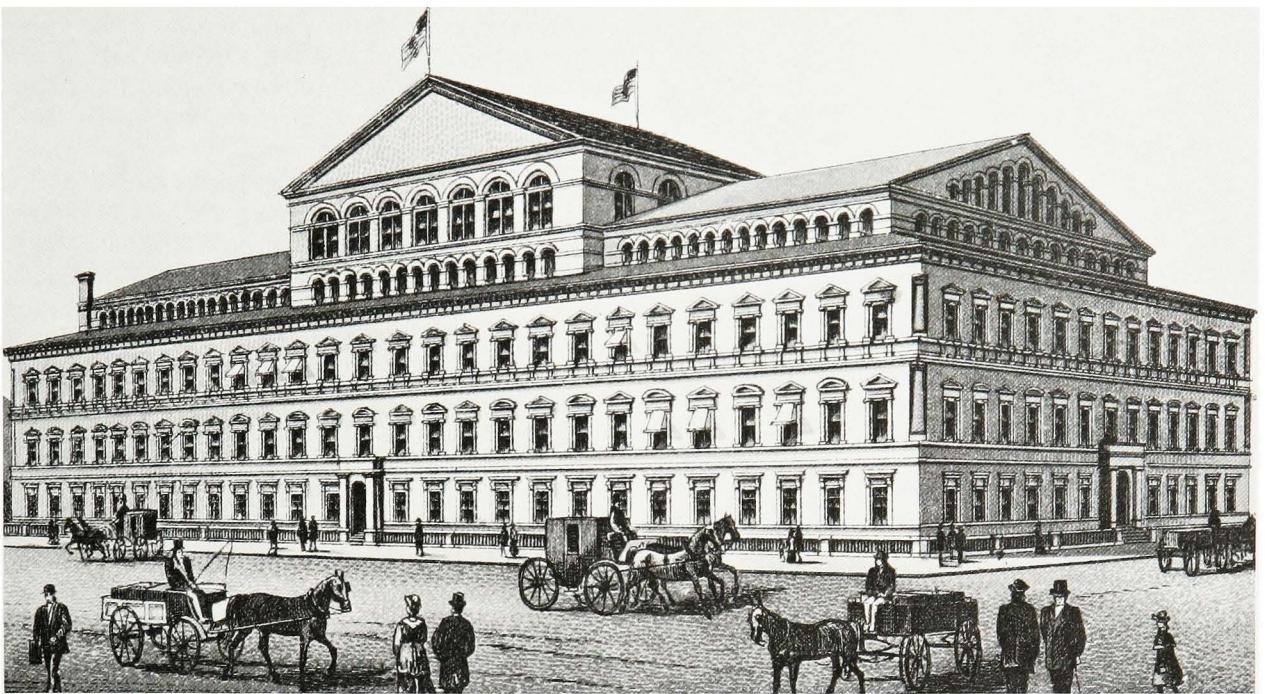
most distinguished prewar builder, Montgomery Meigs, returned to Washington's architectural scene for his last bow. During the 1870's Meigs worked on several buildings. He drew plans for the National Museum and served as consulting engineer on the project. After his retirement from the Army in 1882, he waged an intense but futile struggle to be reappointed to control of the Aqueduct. In 1883 he turned his energies to his most original structure, the Pension Office on Judiciary Square. Externally a red-brick copy of the Farnese Palace in Florence, the grim,



Constructing the Great Court of the Pension Building, 1885.



Building the Library of Congress.



Meigs's Pension Bureau Building, 1891.

obtrusive building quickly gained the nickname "Meigs's Old Red Barn." General William T. Sherman, informed that the structure was fireproof, allegedly remarked, "What a pity." But the interior showed all its builder's gift for advanced technology and dramatic effect. Its central court, five stories high, lighted by a clerestory and roofed with iron and glass, became the site of six inaugural balls. One of Washington's first buildings to have elevators and double-paned windows to exclude heat and cold, the Pension Office pointed to future trends in architecture. Meigs's final gift to Washington, like his first, reflected his training and talent as an Engineer.²⁷

New buildings did not by themselves define the changing character of the nation's capital. From its beginning, the city had been marked by its large reserves of open space. During the Gilded Age the Engineers developed extensive new parks to improve the health of Washington's people and provide them permanent areas of recreation. Early suggestions by Michler and Hoxie that Rock Creek valley be developed as a park had little immediate effect.²⁸ Instead congressional attention was drawn to the urgent problem of the Potomac flats.

Submerged at high water, these shoals

formed at low water a foul-smelling mudbank stretching from the White House to below the Long Bridge. Reeds and grasses covered the muck, and wastes from the Washington Canal decayed in the sun. Engineers had long known that the flats were formed when the Potomac emptied into its broad estuary and dropped its burden of silt. Expanding in response to settlement and deforestation upstream, the flats became a marsh threatening navigation in the Maryland channel of the river. The causeway of Long Bridge and a dam built by Virginia from Analostan Island to the shore accelerated their growth. But little was done about the situation until federal expenditures for rivers rose following the Civil War. Then Engineers dredged channels and removed the rocks obstructing Georgetown harbor. They pointed to the condition of the canal and the flats and recommended that the causeway of Long Bridge be replaced with pilings. Dredging, suggested Michler, could provide spoil to reclaim the flats. In 1872 a board which included Babcock, Shepherd, and Humphreys proposed a general plan for improving the river. Seven years later Twining conceived the idea of providing two tidal reservoirs on the reclaimed land.²⁹

²⁸ S. Doc. 21, 39th Cong., 2d sess. (1867). (2) *Annual Rpt, Board of Commissioners of the District of Columbia for 1879* (Washington, 1879), 101.

²⁹ (1) *Report concerning obstructions to the navigation of the Potomac* ., H. Doc. 133, 23d Cong., 2d sess. (1835), 2, 4.

(2) *Potomac River, Long Bridge, Etc.*, H. Doc. 22, 31st Cong., 1st sess. (1850). (3) *Survey of the Potomac River*, H. Ex. Doc. 292, 40th Cong., 2d sess. (1868). (4) *Report of the Board on the Improvements to the Harbors of Washington and Georgetown . . .*, S. Misc. Doc. 15, 42d Cong., 3d sess. (1872). (5) *Letter of the Secretary of War*, S. Ex. Doc. 32, 45th Cong., 3d sess. (1879).



Col. Peter C. Hains.

With many elements of a comprehensive plan already worked out, Congress acted in 1881 after a severe flood. The lawmakers first ordered a new survey by Corps civilian Sylvanus T. Abert. The report of an Engineer board then laid the groundwork for an act of 2 August 1882 appropriating \$400,000 to improve navigation and raise the flats. The greater part of the work that followed fell to Major Peter C. Hains, head of the Washington Engineer District after 1882. Dredging the channel, Hains hauled the spoil across the flats on a spur railroad, and dumped and spread the material by methods similar to those of contemporary levee work. Under Hains and his successors, Maj. Charles E. L. B. Davis and Lt. Col. Charles J. Allen, the land that was to become Potomac Park rose from the waters of the estuary, while the river flowed through deeper and straighter channels.³⁰

Although litigation by the heirs of early proprietors who claimed the new land prevented development for more than a decade, settlement of the cases in 1899 freed the government's hands for the next phase of the work. In 1897 Washington banker Charles C. Glover persuaded Congress to order the 628 acres of reclaimed land "forever held and used as a park for the recreation and pleasure of the people." Though land-building continued until 1913, the Washington District in 1901 began to transfer the area to the office of public buildings and grounds to be landscaped and improved. Construction of a major park in place of the foul malarial marsh had become possible.³¹

The Gilded Age also saw Nathaniel Michler's dream of Rock Creek Park take on reality. Again Charles Glover led the fight. On Thanksgiving Day in 1888 the banker invited assistant Engineer commissioner Col. Thomas W. Symons and two other prominent Washingtonians to make a tour of the valley. Before the trip was over, all agreed to work for the creation of a park. Warning that encroachment by dwellings would soon pollute the creek beyond recovery, Glover and his associates in 1890 persuaded Congress to appropriate \$1.2 million — half from the Treasury and half from the revenues of the District — for a park of not over 2,000 acres, as "a pleasure ground for the benefit and enjoyment of the people of the United States." A commission which included General Casey, Engineer commissioner Lt. Col. Henry M. Robert, and three private citizens began to purchase land. Despite obstruction by private owners and many legal battles, in 1892 the Chief of Engineers took possession on behalf of the commission. Two years later he turned over 1,605.9 acres to the permanent board of control, which consisted of himself and the commissioners of the District of Columbia. Though little development took place until the 20th century, the basis of the future park had been laid.³²

In addition to monuments, buildings, and parks, the Engineers also improved urban transport. Hains completed Babcock's Chain Bridge and the Navy Yard Bridge, began to reconstruct the Washington end of the Long Bridge, and marked the end of an era by transforming Aqueduct Bridge from a trough for canal boats to a steel truss bridge for wheeled traffic. Capt. Eugene Griffin, an assistant

Potomac Flats at Washington, D.C.," *Trans. ASCE*, XXXI (1894), II, 55-80.

31 (1) Quote in 29 Stat. 624. (2) ARCE, 1896, II, 1023; 1899, II, 1415.

32 (1) *Park Improvement Papers* (Washington, 1903), 102. (2) Tindall, *Standard History*, 472-73. (3) 26 Stat. 78; 26 Stat. 492.



Gallery of the Rotunda, Library of Congress.

Engineer commissioner who later helped found the General Electric Company, gained national recognition for his studies of electric streetcars. In 1892 electrification of the Washington lines followed.³³

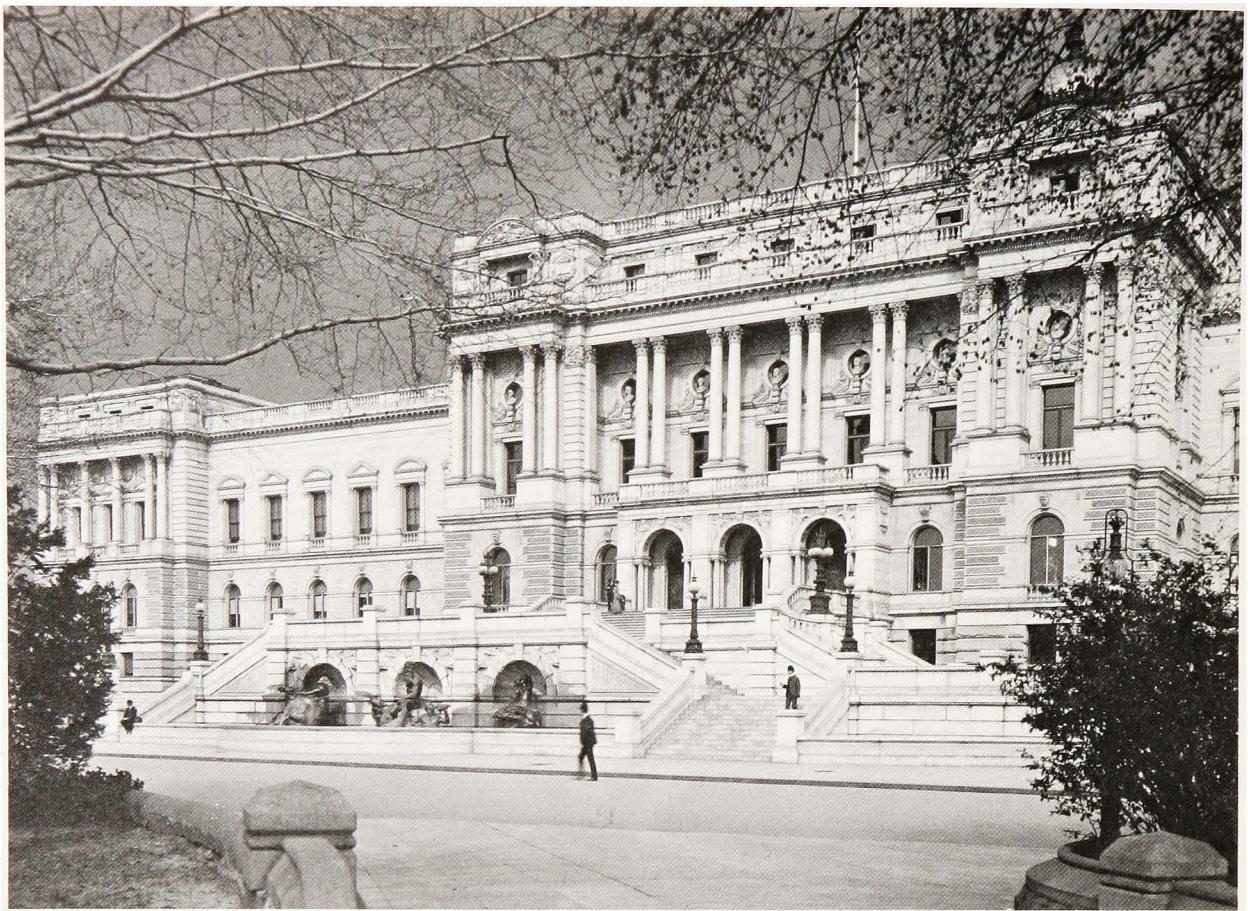
Washington's streets needed both care and planning. Daily maintenance was a duty of the Engineer commissioners whose department kept streets clean with a patent twig brush drawn by horses. Considerably more demanding was the threat that random growth posed to an adequate street system. In 1879 Engineers began urging Congress to adopt a unified street plan for the whole municipal area. In 1888 Congress required new subdivisions to conform to the city's street plan, and five years later the Highway Act of 2 March 1893 created a board of extensions com-

posed of the Secretaries of War and Interior and the Chief of Engineers to approve plans for the entire District. Assistant Engineer commissioner Capt. Lansing H. Beach and William P. Richards of the District's engineering department carried out this complex task between 1893 and 1897. In 1898 a new act exempted existing subdivisions. By 1900, when the maps were complete and the new streets named, the sprawl of the early suburbs was curbed as far as possible. More important, the need for civic planning received recognition from the department of city government controlled by the Engineer commissioner.³⁴

As the century drew to a close, Washington had both drawbacks and benefits to show for its new status as the national city. Federal control had ended the franchise, leading to sporadic pro-

33 (1) *Centennial of the U.S. Military Academy*, I, 850. (2) S. *Misc. Doc.* 84, 50th Cong., 1st sess. (1888). (3) *Monthly Returns*, Jul 1887, Aug 1891.

34 (1) *Annual Report of the Board of Commissioners of the Dis-*



The Library of Congress, ca. 1900-10.

tests by residents. But the government shouldered much of the burden which its own presence and the L'Enfant plan had imposed upon the District. At Congress's bidding, the Engineers and other government workers erected buildings and monuments of lasting charm and usefulness. Raising the flats improved public health, the foundations of a unique park system were laid, and the city was efficiently governed.

The change in the Corps' role was profound. In the new Washington Army Engineers took on the role of administrators as well as builders. Following their professional bent toward order and system, they carried out de facto civic planning in advance of the national reform movement that swept American cities after 1893. Like other reformers of the period, they saw in parks a means of improving the sentiments and morals

as well as the physical health of city dwellers. Their contribution to Washington's park system was fundamental. Though ultimate power over the city's fate rested in the hands of the congressional District committees and the District's own powerful Board of Trade, the Engineer commissioners helped to make the unique local government a model of efficient administration in an age of municipal corruption.³⁵

Washington under its new commissioners lost the franchise and abandoned the dream of independent commercial prosperity that began with the first President. But it became a livable and charming city, well able to hold the government against the blandishments of other regions. Fostered by the nation, it now had resources of wealth and talent that could make it a major showplace of urban life in America.

35 (1) ARCE, 1867, 332. (2) Frederick Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington: Smithsonian Institution Press, 1977), 82-84, 170.

(3) See also Geoffrey Blodgett, "Frederick Law Olmsted: Landscape Architecture as Conservative Reform," *Journal of American History*, LXII (1976), 869-89.

Chapter IV

Progressive Washington

On 27 April 1909, at the order of the District commissioners, the remains of Pierre Charles L'Enfant were disinterred. Briefly interrupted by a thunderstorm, the silent work continued until coffin and body were removed from beneath the red cedar tree where they had rested for 84 years. Sealed in a new casket and wrapped in a flag, L'Enfant's body was moved the following day to the Capitol rotunda, escorted by a detachment from the Second Battalion, Corps of Engineers. For three hours, government officials and throngs of ordinary citizens paid their respects. Then eight Engineer sergeants bore the casket to a caisson for the trip to Arlington, where it was reburied with appropriate honors.¹

On a May afternoon two years later, Secretary of War Elihu Root dedicated at the gravesite a simple tablet engraved with the original plan of the city of Washington. "Few men," declared Root, "can afford to wait a hundred years to be remembered. It is not a change in L'Enfant that brings us here. It is we who have changed, who have just become able to appreciate his work. Our tribute to him should be to continue his work."²

In an urban planner with dreams of grandeur, 20th century America had found a kindred spirit. Between L'Enfant's first burial and his second, the nation had grown from a backwoods republic to a world power. Buoyed by their victory in 1898 over Spain, Americans soon after the turn of the century embarked on sweeping reforms that keynoted the Progressive Era. To reconstruct the nation's cities — to reform their morals, improve their governments, and reshape their physical form — became a national goal. Impulses to patriotism and reform registered in Washington, and the simultaneous approach of its centennial as the nation's capital triggered a major rediscovery of L'Enfant and his plan. Many Americans now agreed with Frederick Law Olmsted, Jr., that Washington must reflect the "grandeur, power, and dignified magnificence which should mark the seat of government of a great and intensely active people."³

An early leader in reviving interest in L'Enfant and his plan was Engineer Col. Theodore A. Bingham, officer in charge of public buildings and grounds from 1897 to 1903. The dapper, energetic Connecticut Yankee had pre-



Col. Theodore Bingham.

viously served as military attaché to the legations in Berlin and Rome. Later he would gain national attention as a reforming police commissioner of New York City. His discovery of L'Enfant grew out of the duties of his office. Concerned over squatters on federal reservations, Congress in 1898 instructed Bingham to review the status of federal land in the District. Rumaging through the files, employees of the office turned up fascinating records of L'Enfant and the early city, which the Engineer forwarded to Senator James McMillan of Michigan, chairman of the Senate District Committee. Then news of a danger to the Mall galvanized Bingham into action.⁴

Ironically, the problem grew out of a reform program devised by Engineer commissioner Col. William M. Black and supported by McMillan. After long negotiations, Black had worked out an agreement with the railroads to eliminate the city's many dangerous grade crossings. A bill supported by McMillan provided for comprehensive reform, but also allowed the Pennsylvania Railroad to build a new \$1.5 million station and viaduct on the Mall. The Chief of Engineers joined many others in protesting that such an arrangement would destroy the heart of L'Enfant's plan. Despite such warnings, Congress ultimately

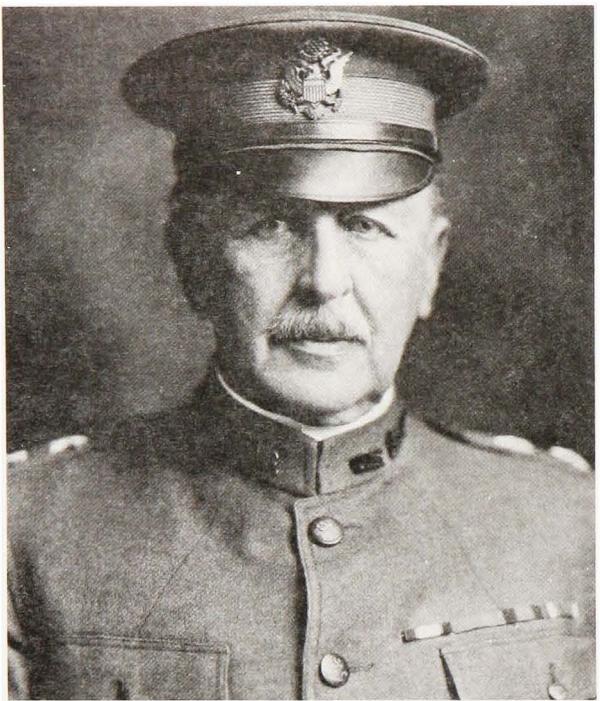
also Mel Scott, *American City Planning Since 1890* (Berkeley, Los Angeles, London: University of California Press, 1971), 6-10, 33-37, 47-49.

¹ (1) Bingham biographical file, EHD. (2) Ltr, Bingham to James MacMillan, 17 Dec 1898, Recs of OBG, Ltrs Sent, NA, RG 42. (3) ARCE, 1898, 3735-36; 1900, 5283, 5286.

¹ (1) Description based on Caemmerer, *Life of L'Enfant*, 293-97. (2) 35 Stat. 317.

² Quoted in Kite, *L'Enfant and Washington*, 29.

³ (1) Olmsted quoted in Reps, *Monumental Washington*, 91. (2) *Report of the Commissioners of the District of Columbia for the Year Ended June 30, 1901* (Washington, 1901), I, 8. (3) See



Maj. Gen. William M. Black as Chief of Engineers.

enacted the scheme and in early 1901 President William McKinley signed it into law.⁵

While the bill was still pending, Bingham had turned for help to Frederick D. Owen, an employee of his office. Between January and April 1900 the two completed plans which if adopted would save the Mall, restore some of L'Enfant's neglected ideas, and improve the new-built land of Potomac Park. Though neither man was a professional architect — Owen had studied in Europe, but his career had otherwise been a mixed experience as engineer, topographer, and draftsman — the result was imaginative and influential.

Restoring L'Enfant's grand avenue to the Mall, Bingham and Owen proposed to name it Centennial Avenue and make it a broad ceremonial roadway flanked by public buildings. Since reclamation of the flats had extended the Mall to the west, they proposed that a parade ground or a new statuary group be created to bring L'Enfant's grand axis to the river. Virginia Avenue would angle across the Mall to the Washington Monument, while an avenue to the south named for L'Enfant would lead into gently curving drives enclosing East Potomac Park.

5 (1) William M. Black Diary, entries for 11 Jun, 20 Jul, 2 Nov. 1 Dec. and 7 Dec 1897 and 18 Feb 1898; in EHD. (2) Tindall, *Standard History*, 416-17. (3) 31 Stat. 772, 774; 37 Stat. 767. (4) Green, *Washington: Capital City*, 55.

6 (1) ARCE, 1899, V, 3825; 1901, I, 1719, and V, 3759. (2) Reps, *Monumental Washington*, 76-77. (3) 31 Stat. 622. (4) Washington Post, Apr. 29, 1900.

7 (1) Ltr, Bingham to Chf of Engrs, 15 Nov 1900, Corres. file, No. 36442, NA, RG 77. (2) 31 Stat. 622. (3) H. Misc. Doc. 135, 56th

Memorial Bridge would extend the line of New York Avenue across the Potomac to Arlington. In later studies, Bingham and Owen showed the future Federal Triangle developed with government buildings, and a boulevard connecting Potomac and Rock Creek Parks. Their proposals won an enthusiastic response from the President and congressional leaders, as well as a lengthy airing in the *Washington Post*.⁶

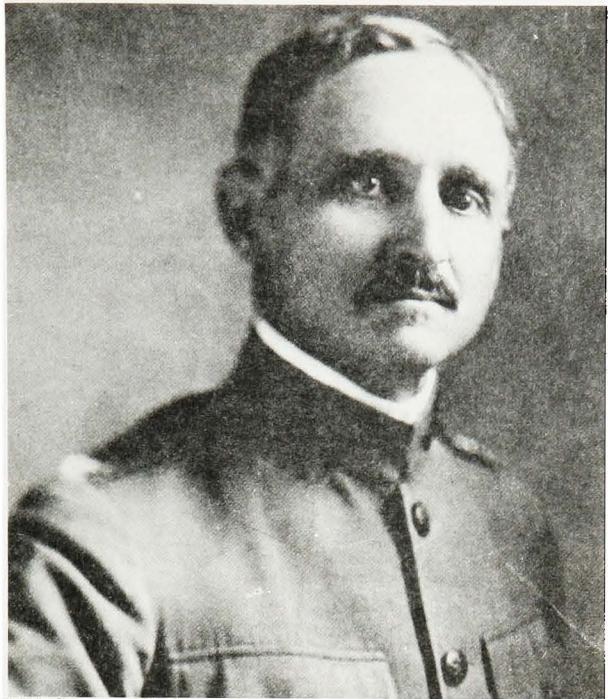
Others were quick to follow Bingham's lead. Senator McMillan emerged as a leading congressional patron of city planning for Washington. When Congress asked for a professionally drawn plan, Bingham secured a landscape architect and endorsed the new plan although it was much less successful than his own.⁷ Professional architects also became interested. Glen Brown, historian of the Capitol and secretary of the American Institute of Architects, persuaded his organization to meet in Washington in December 1900. Here leading landscape and structural architects, including Frederick Law Olmsted, Jr., presented papers on the city. When a bill setting up a planning commission under the Chief of Engineers failed in the House of Representatives, McMillan secured Senate funds and the backing of the profession for a new board to be called the Park Commission.⁸

The commission's plan became the basis for the completion of monumental Washington. Emphasizing formality and neoclassic building design, the commission proposed to redevelop the Mall as a *tapis vert* — a "green carpet" of grass; to realign the grand axis with a Lincoln Memorial at its western end; and to site Memorial Bridge by drawing a line from the Memorial to Lee's mansion in Arlington. In a remarkable coup, commission members persuaded the Pennsylvania Railroad to move its station north of the Capitol, freeing the Mall from trains, noise, and smoke. A decisive event in the history of Washington, the plan won acceptance through the lobbying of the American Civic Association and the support of a series of Presidents. President Theodore Roosevelt appointed a consultative board to guide executive agencies in carrying out the plan.⁹

Cong., 2d sess. (1901). (4) Reps, *Monumental Washington*, 78-80.

8 Glenn Brown, *Memories* (Washington: W.F. Roberts Co., 1931), 108-10. (2) Reps, *Monumental Washington*, 80-82, 91. (3) H. Bill 13532, 56th Cong., 2d sess. (1901). (4) Ltr, Lt. Col. Charles J. Allen to Chf of Engrs, 31 Jan 1901, Corres. file, No. 37965, NA, RG 77.

9 Reps, *Monumental Washington*, 98-100.



Maj. Spencer Cosby.

Engineers assisted the work in many capacities. A member of the Roosevelt board was former Corps civilian Bernard R. Green, builder of the Library of Congress, the Smithsonian Natural History Museum, and the new Public Library on Mount Vernon Square. When Congress set up a permanent Fine Arts Commission in 1910, President William Howard Taft chose Maj. Spencer Cosby as secretary and executive officer — a post held from that time forward by Cosby's successors in the office of public buildings and grounds. Before the outbreak of World War I, the Corps launched more than twenty major construction projects—public buildings, civil works, and memorials. In fact, because of their participation in the municipal government, Engineers had a hand in every public construction project of these years.¹⁰

But, in Washington as elsewhere, increased specialization characterized the new century. In none of the work did the Engineers exercise design functions with the freedom of Meigs or even Casey. The new Washington, sometimes elegantly restrained, sometimes ponderously classical, bore throughout the mark of an architectural establishment dominated by Chicagoan Daniel Burnham, architect of the Pennsylvania Railroad, and by the New York firm of McKim, Mead & White.

Within the limits set by the designers, the Engineers might find little work to do or much.

10 (1) Monthly Returns, CE, Oct 1910, NA, RG 77. (2) 36 Stat. 371. (3) Tindall, *Standard History*, 448, 450.

11 (1) Quote from ARCE, 1902, IV, 2722; see also 1903, I, 658. (2) Tindall, *Standard History*, 435-36. (3) Monthly Returns, Jul 1900, NA, RG 77. (4) Reps, *Monumental Washington*, 80-82.

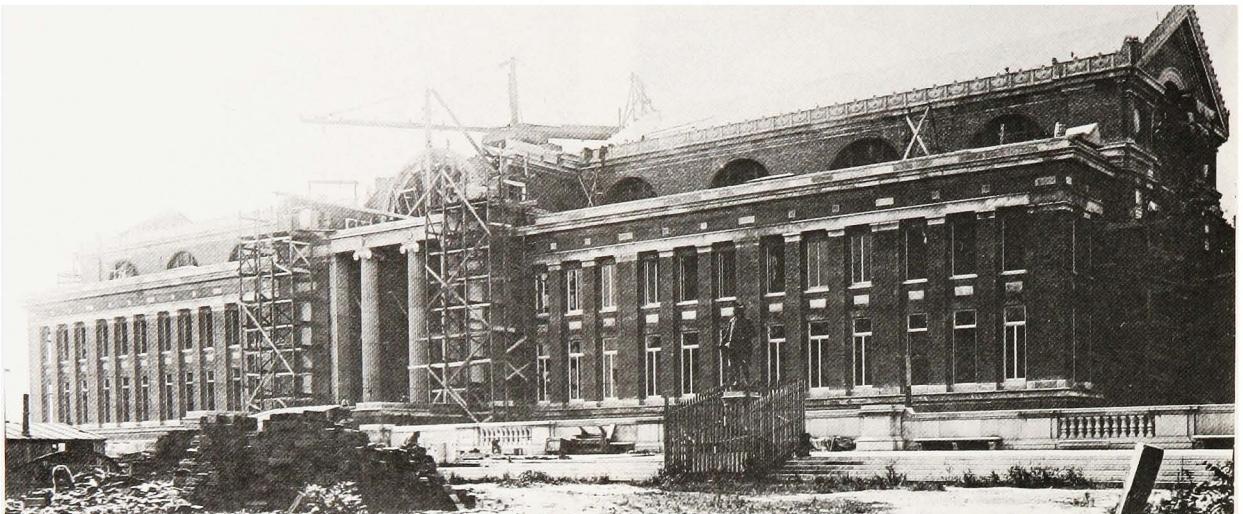
Confronted by the need to extend the staff-crowded White House, Bingham and Owen presented a plan and model which were not well received. McKim, Mead & White then designed a new building to accommodate the presidential offices, and completely renovated the mansion itself. The office of buildings and grounds did little but move the Roosevelts to temporary quarters for the summer of 1902, and strip the deserted mansion bare "from attic to cellar" for reconstruction by a contractor. By contrast, a plan prepared by the same architects for the War College, Engineer School, and Washington Barracks in Southwest Washington gave exceptionally wide scope for Engineer work.¹¹

A military reservation since 1797, and an arsenal since 1803, Greenleaf Point at the confluence of the Anacostia and Potomac Rivers had become the site of a federal penitentiary in 1826 and of the trial of Lincoln's accused assassins in 1865. Renamed Washington Barracks when the arsenal ceased operations in 1881, the post decayed until 1901, when the Engineer School and Depot were moved there from New York. With its enlarged garrison "crowded and uncomfortable" between the marshes of the James Creek Canal and the intermittently flooded riverbanks, the post urgently required reconstruction. The Engineer Depot lacked even a warehouse for its store of bridge equipment, engineering tools, and scientific instruments.¹²



Col. John S. Sewell in 1919.

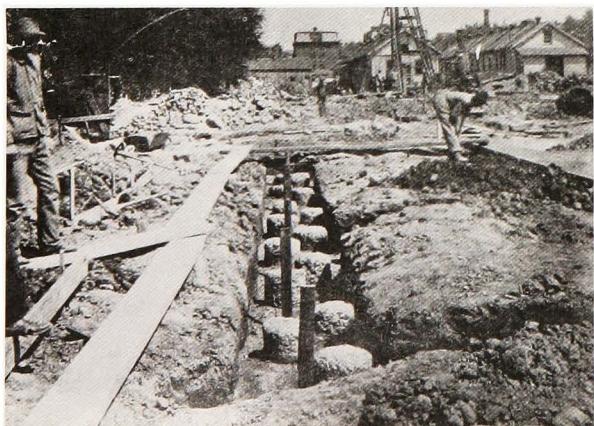
12 (1) Quote from ARCE, 1902, I, 794; see also 1901, I, 42. (2) Green, *Washington, Capital City*, 140-41. (3) Tindall, *Standard History*, 456. (4) ARCE, 1903, I, 20; 1906, I, 14, 838. (5) 32 Stat. 512.



Construction of the Army War College, 1906.

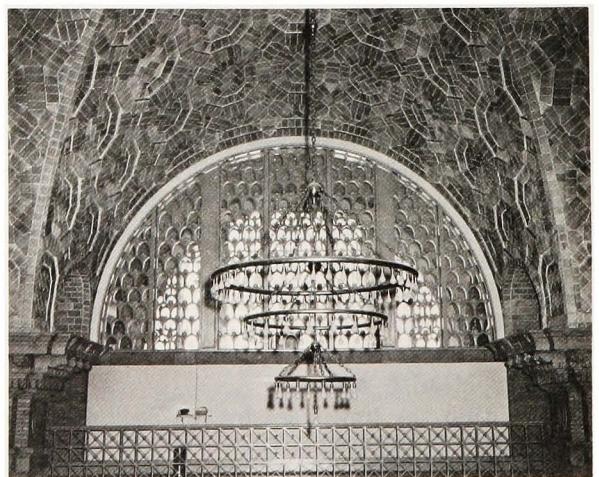
In 1901, under Engineer Brig. Gen. William Ludlow, the War College Board — a forerunner of the General Staff — studied the reservation as a site for the nation's highest strategic school. At the same time an Engineer board reviewed the needs of the Corps. Between June 1902 and January 1903 Charles F. McKim, a member of the Park Commission, drew up a comprehensive plan, and Congress voted an appropriation to begin work. Utilizing the long axis of the Point, the architect set the War College against the backdrop of the two rivers. The setting plus the classic building designs promised an impressive addition to Washington.

But Engineer Capt. John S. Sewell encountered serious technical problems as construction began. Preliminary plans had to be revised when trenching showed that the Point was extensively filled with a mosaic of different foundation materials. To support the buildings along "General's Row," Sewell turned to a new device,



Concrete Pilings for Foundation of Officers' Quarters, "Generals' Row," Washington Barracks, 1903.

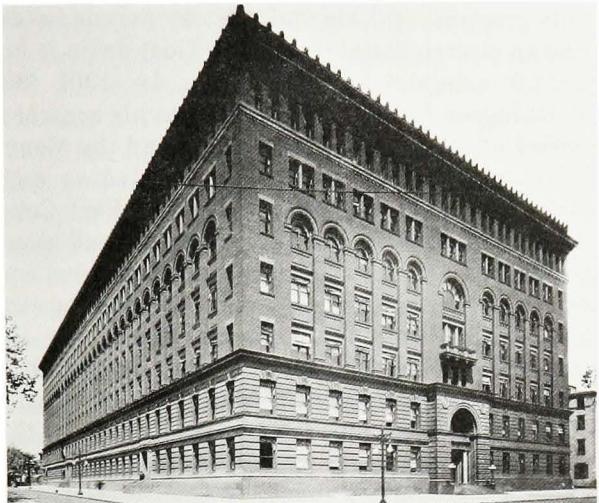
concrete pilings. Learning of an untried manufacturing process, he negotiated a contract with the local licensee. Through weeks of trial and error, Sewell worked out the best method of using the pilings, then built the homes upon them. On materials, too, Sewell had a word to say, choosing brickwork for the War College "not only from motives of economy, but also because it seemed more in keeping with military simplicity." Sewell had the bricks laid in bond carried through walls which were 15 to 18 inches thick. Remarkable interior tile-work enhanced the vaults and dome. By 1907, when his funds were exhausted, Sewell had provided not only the college, but barracks, officers' and NCO quarters, mess halls, stables, a guardhouse, a bakery, and a wharf. Despite foundation problems and inflation, he reported that careful spending and simple design had held costs within estimates.¹³



Interior Tile-Work at the War College.

¹³ (1) Quote from ARCE, 1904, IV, 3866. (2) See also 3867-70; 1906, II, 2259-68; and George J. Stansfield, *A Historical Summary: The National War College and the National War College Building* (Washington, 1977).

The overall result was impressive. Architect and Engineer together had transformed an eyesore into a civic gem. For Sewell the job was a high point in a career during which he also built the new Department of Agriculture building on the Mall, new buildings at the Soldiers' Home, and the Government Printing Office at North



The Government Printing Office, ca. 1900-10.

Capitol and H Street — a construction record more extensive in its way than Casey's.¹⁴

Construction did not tell the whole story of Corps activities. A wide range of administrative duties absorbed the energies of the office of public buildings and grounds. Bingham's planning for the Mall and the White House was incidental to a variety of daily tasks that helped to sustain the fabric of city life. As military aide to the President, Bingham was summoned in September 1901 to Buffalo where William McKinley died of an assassin's bullet. "[I] had personal charge of his casket," Bingham noted, "from the moment he was placed in it until it was deposited in the receiving vault at Canton, Ohio." Besides care of the War Department buildings and the Washington Monument, Bingham's duties included repair of Ford's Theatre, restoration of the house where Lincoln had died, and arrangements for Easter Morning egg rolls at the White House. He also directed the Park Watchmen, an ill-paid force who struggled against criminals infesting the President's Park and against "scorch-



Bartholdi's Cavalry Group, Grant Memorial.

14 (1) On GPO, see 30 Stat. 1120; ARCE, 1901, I, 685-86, and V, 3801-22. (2) Monthly Returns, 10 Apr 1905, in *Statement Showing Rank, Duties, and Addresses of the Officers of the Corps of*

Engineers, U.S. Army (n.p., n.d.); in OCE Library, Washington, D.C.

ing" bicyclers who endangered life and limb by racing around the Ellipse.¹⁵

In a time of monument-building, his work increased as memorials rose to Grant, Sherman, McClellan, Pulaski, Von Steuben, Kosciuszko, Longfellow, Columbus, and John Paul Jones, among many others. Each important memorial had its own *ad hoc* commission to choose the design, but the office of buildings and grounds provided sites, sometimes erected the memorials, and maintained them. Especially complex was the huge Grant Memorial voted by Congress in 1901, interrupted by lawsuits over the cutting of trees on the Mall, and substantially completed on the verge of World War I.¹⁶

But the primary work of Bingham and his successors lay in developing the parks. A law of 1898 vested control of the District of Columbia parks in the Chief of Engineers, who delegated the job to the office of public buildings and grounds. By 1900 the office controlled 407 acres, patrolled by watchmen and maintained by a landscape gardener whose laborers propagated and set out a million plants a year. From the largest reservation to the smallest, the work of draining, lighting, and landscaping went on from season to season, as did the laying out of new walks, drives, lawns, and playing fields for both children and adults. Believing that "the parks in and around Washington should form a systematic and well-considered whole," Bingham looked forward to a day when the whole system would constitute "an

emerald setting for the beautiful city within."¹⁷

Notable was the transformation of Potomac Park from wilderness to beauty spot. An enthusiast convinced that parks improved the health and happiness of the "toiling masses crowded together in cities," Bingham included plans for drives, Japanese gardens, nurseries, polo grounds, athletic and military parade fields, and an electric fountain for the Tidal Basin in his grand scheme for the area. In 1901 the Washington District transferred to his control a parcel of land between the Basin and the Monument grounds and Bingham submitted an estimate for its improvement. Following Park Commission plans, he raised the revetment wall along the Tidal Basin, cleared and graded the area, and built a 50-foot-wide macadam drive along the east side of the Basin. Through his efforts, the old two-story house which canal lock-keepers had used as a gate house was deeded by the company's trustees to the Chief of Engineers for use by the public. Repaired and refurbished, the building became a watchman's lodge. Around it, workmen swept away sheds and mounds of rubbish, built a drive, planted trees, and seeded lawns.¹⁸

Under his successors, the improved area grew in size, as district Engineers finished dredge-and-fill operations and transferred new-made land to the office of buildings and grounds. Slowly workers cut brush, graded land, and constructed athletic fields, gardens, nurseries, roadways, and a boat basin. In 1908 Congress voted money for a



Drive at the Tidal Basin, ca. 1900-10.

15 (1) Quote from *ARCE*, 1902, IV, 2719. (2) Monthly Returns, Jul 1899, NA, RG 77. (3) Rpt, Bingham to Chf of Engrs, 19 Jul 1900, in Rpts of the OBG, p. 26, in NA, RG 42. (4) *ARCE*, 1902, IV, 2730.

16 *ARCE*, 1913, III, 3235-37.

17 (1) Quote from Rpt, Bingham to Chf of Engrs, 19 July 1899,

in Rpts of the OBG, p. 381, 386, in NA, RG 42. (2) *30 Stat.* 570. (3) *ARCE*, 1901, 3701, 3730.

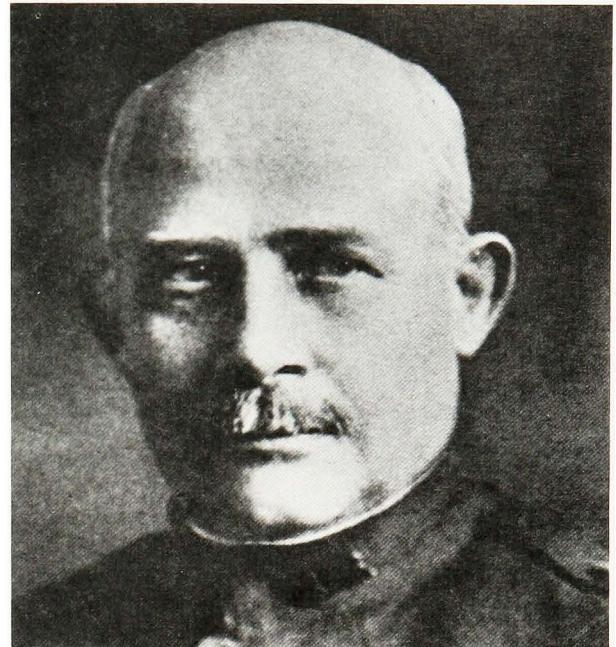
18 (1) Quote from RPT, Bingham to Chf of Engrs, 19 Jul 1899, Rpts of the OBG, p. 384, in NA, RG 42. (2) *ARCE*, 1901, V, foll. 3718; 1902, IV, 2739; 1903, IV, 2552-55; 1915, I, 1669-70.

riverside drive from the basin inlet to 26th Street, and extended North B Street — the future Constitution Avenue — west as a park roadway to the Potomac.¹⁹

On 25 March 1912 final work began on one of the best-known Engineer improvements, as 3,800 flowering cherry trees, a gift from the municipality of Tokyo, arrived to replace an earlier shipment that had proven to be diseased. On the afternoon of 27 March, Mrs. William Howard Taft planted the first tree beside the Tidal Basin, where eleven years of care had created a perfect setting. The office of buildings and grounds under Colonel Spencer Cosby had long sought to introduce cherry trees to the area. Now Cosby's workers laid out and planted what was to become the most famous grove in the United States. In recognition of the long Engineer endeavor to create and embellish Potomac Park, the name "Hains Point" was chosen in 1917 for the southernmost tip of East Potomac Park. It was a fitting memorial, not only to Colonel Hains, but to his successors.²⁰

While Engineer work in the parks and the monumental city progressed, the Engineer commissioners and their assistants labored to make the workaday city more livable and efficient. Municipal health and traffic problems, civic construction, and governmental reform all received attention. Aided by the generosity of Congress, the commission government spent \$23 million on municipal improvements. A period of swift progress began in 1898 when Capt. William M. Black secured an agreement with the railroads that eliminated grade crossings in the city. When Black left Washington to serve in the war against Spain, his successor, Capt. Lansing H. Beach, emerged as a forceful leader in District affairs. Using plans developed by Capt. David D. Gaillard, Beach began a bridge to carry Massachusetts Avenue across Rock Creek Valley, and completed another bridge at Quarry Road. Architects George S. Morison and Edward P. Casey designed and in 1900 began to build the "Lion Bridge" of five huge precast concrete arches that bore Connecticut Avenue across the valley. Beach also constructed the main north-south drive in Rock Creek Park.²¹

Another project long desired by the commis-



Capt. Lansing H. Beach.

sioners took form in 1905, as the new District Building began to rise under assistant Engineer commissioners Maj. Chester Harding and later Capt. William Kelly. Between 1900 and 1907 the commissioner, Maj. John Biddle, built a \$5.1 million system of trunk and interceptor sewers and sewage pumping stations. Ending the flow of waste into Washington's riverfront, the system carried sewage through an inverted siphon under the Anacostia and discharged it into deep water downstream from the city. Embodying a plan drawn by America's leading sanitary engineers, the system marked a turning point in the long struggle to improve public health in the city.²²

The Progressive Era also brought reform to municipal administration. The commissioners maintained a voluntary merit system, while urging Congress to establish a compulsory civil service system for the District. They sought authority to regulate District utility companies. Maj. William V. Judson, Engineer commissioner from 1909 to 1913, led the fight for regulation that ended with the establishment of the Public Utilities Commission. Through such reforms, the commissioners created during the Progressive years what a local official called "a distinct era in the history of the District of Columbia."²³

19 ARCE, 1904, IV, 3941; 1905, III, 2646; 1906, II, 2136, 1907, III, 2327; 1908, III, 2400.

20 (1)ARCE, 1912, I, 1320, and III, 3501; 1917, III, 3715. (2) See also Roland M. Jefferson and Alan E. Fusonie, *The Japanese Flowering Cherry Trees of Washington, D.C.: A Living Symbol of Friendship* (Washington, 1977).

21 (1) Waldon Fawcett, "The Longest Concrete Bridge in the World," *American Exporter*, LXII (1908), 87-89. (2) ARCE, 1898, VI, 3608. (3) *Report of the Commissioners of the District of Columbia for the Year Ended June 30, 1900* (Washington, 1900) (Washington,

1900), I, 25; 1901, I, 29; 1903, I, 39 (4) Tindall, *Standard History*, 301, 476.

22 (1) Tindall, *Standard History*, 300, 306, 445. (2) Monthly Returns, Apr 1905, NA, RG 77. (3) Green, *Washington, Capital City*, 45, 137, 149. (4) 30 Stat. 530, 1050. (5) *Report of the Commissioners of the District of Columbia for the Year Ended June 30, 1901* (Washington, 1901), I, 29; 1900, I, 27; 1905, I, 45.

23 (1) *Report of the Commissioners*, 1905, I, 10; 1908, I, 13. (2) Tindall, *Standard History*, 428-29; quote, 299.



Maj. William V. Judson.

The same years saw the Washington District Engineers undertake major new projects. By the 1890's, Washington's venerable Long Bridge had begun to show the effects of age. Its much-criticized causeway remained an obstruction to the free flow of the Potomac, and a frequent cause of flooding in Southwest Washington. While attempting to repair the bridge, the Engineers became convinced that it must be replaced. Under the general provisions of the railway act — the same that eliminated grade crossings and threatened the Mall with a viaduct — the

Baltimore and Potomac Railroad undertook to build a new railroad bridge upstream. A board composed of Lt. Col. Charles J. Allen, the Washington District Engineer, and three other officers chose a steel truss design costing \$996,000; construction began in October 1903 and ended in February 1906. Work then commenced on the complementary arch across Washington channel, which was completed in 1908. Together the bridges reduced hazards to Alexandria traffic while ending floods caused by the old bridge. Between 1897 and 1907 Engineers also rebuilt three piers of the Aqueduct Bridge, and recommended a new bridge to connect Georgetown with Rosslyn, though congressional action did not follow for a decade.²⁴

The district also helped to write a new chapter in the continuing Memorial Bridge story. The Engineers carried out surveys in 1886 and 1890. In 1897, Colonel Allen joined Stanford White and others on a board of architects and engineers which secured plans from the best American bridge designers, finally choosing a \$3.7 million masonry arch structure with a steel draw span proposed by William H. Burr of Columbia University. Though congressional inaction delayed this project for another twenty years, the Engineers had seen one major bridge to completion during the Progressive Era, had repaired another, and planned a third.²⁵

During the same period they also completed a long and difficult effort to improve the city's water supply. In the 1880's construction of a tun-



The Railroad Bridge, 14th Street.

24 Monthly Returns, Aug 1891, NA RG 77. (2) 31 Stat. 772. (3) H. Doc. 138, 57th Cong., 1st sess. (1901), 4. (4) ARCE, 1902, IV, 2653-89; 1906, I, 811-13; 1901, V, 3640-43; 1916, I, 1783-85.

25 (1) H. Doc. 578, 56th Cong., 1st sess. (1900). (2) ARCE, .900, VIII, 5123, 5137-38. (3) ARC, 1886, II, 893-94; 1900, VIII, 5130-31.

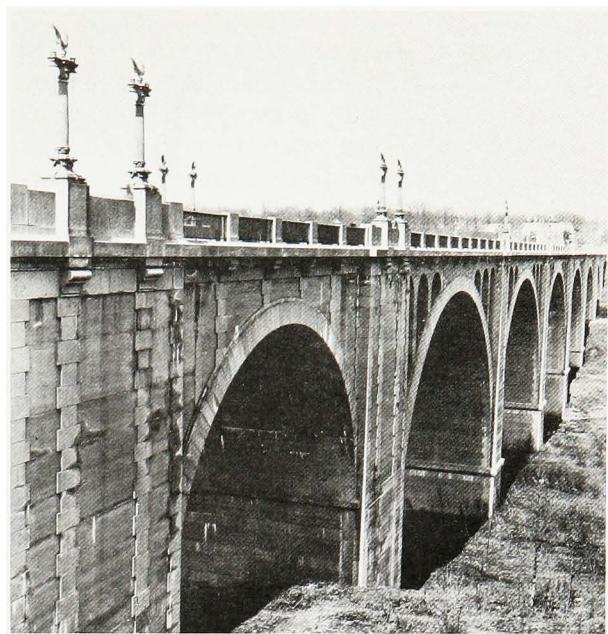
nel to a new reservoir near Howard University ran into a series of technical and administrative problems, and ended in a congressional investigation. Not until 1894 did Capt. David D. Gaillard resume work, which Capt. Alexander M. Miller finished in 1902. The abundant water still needed filtration and metering, since the silt-laden Potomac sometimes supplied capital residents a drink that was more solid than liquid. Corps studies in 1898 and 1899 recommended chemical methods as a solution. Initial congressional agreement turned to disapproval when local groups protested. Congress selected slow sand filtration, and in 1903 the Engineers began construction of a facility near the Soldier's Home capable of handling 75 million gallons a day. By 1905 work was far enough along to permit filtration of the entire city's water supply. With pumping station, filter beds, reservoir, sandwashing system and storage tanks, plus a laboratory for testing the water, the new facility helped not only to reduce turbidity but to filter out bacteria as well. In 1910, when popular fear of chemicals had abated, Congress authorized use of alum, and Engineers built a coagulating plant between Dalecarlia and Georgetown.²⁶

Metering was intimately related to filtration, since cost varied with the quantity of water to be treated. Washingtonians, blessed with a free supply, were drinking too much, and by 1903 used 212 gallons daily per capita. After long urging, Congress permitted the Engineers to begin metering in 1906, and a dramatic one-third drop in consumption followed. Water supply was now both clear and abundant, and, despite meters, average Washingtonians voted their approval by using slightly more than the national average each day. Though Engineers still hoped to build a second conduit to supplement Meigs's, they had accomplished much. In an important area of public health, Washington entered the second decade of the 20th century a truly modern city.²⁷

Even with sewage facilities and filtered water, a menace to the city continued to exist in the flats of the Anacostia River. Here again, it was Hains who developed the first project for raising the flats. Though Congress authorized some dredge and fill work in the 1890's, interest in a comprehensive plan of improvement did not revive until 1898. During these years, reports by district Engineers portrayed the lower Anacostia as a tidal backwater of the Potomac rapidly filling with silt from the larger river. The harbor

26 (1) *S. Rept.* 2686, 50th Cong., 2d sess. (1888), Pt. 2, 280. (2) *ARCE*, 1898, IV, 3658; 1902, I, 595; 1906, I, 817, 819; 1916, I, 1787. (3) *S. Doc.* 259, 56th Cong., 1st sess. (1900), 16.

27 (1) *ARCE*, 1906, II, 2093-95. (2) H. Paul Caemmerer, *Washington, the National Capital* (Washington, 1932), 224. (3)



Taft Bridge, Rock Creek Park.

once admired by Washington and L'Enfant had turned to mudflats thickly grown up with eel grass and wild rice. With clamorous water birds, wild flowers, and broad reaches of reeds and mallows, the marsh had a beauty of its own. But neighboring parts of the city were scourged by malaria, and sewage discharged into the river covered the reeking mudbanks. Conditions were particularly bad in front of the Navy Yard and the Government Hospital for the Insane. Attributing malaria to the "fermenting" wastes — the role of the mosquito was not yet widely known — Colonel Allen recommended dredging and filling, with the threefold aim of bettering access to the Navy Yard, reopening the river to commerce, and ending the menace to public health.²⁸

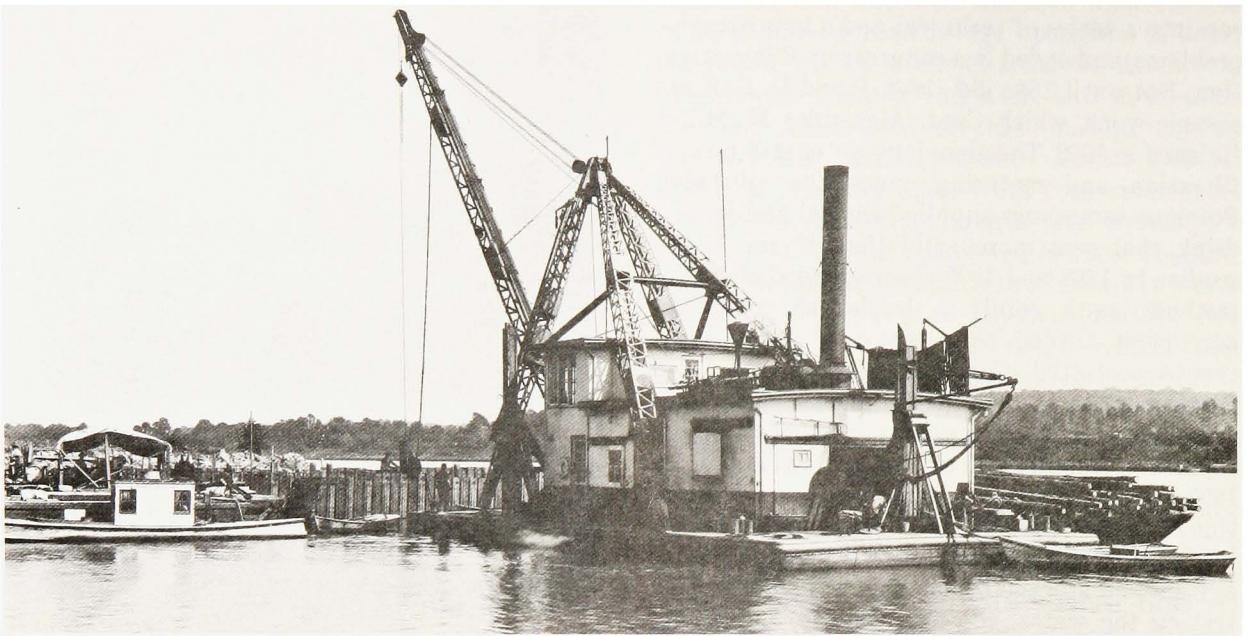
With \$150,000 voted by the lawmakers, work began in 1902 on the section south of the Navy Yard. The district let a contract to dredge a 300x20-foot channel through the shoals. Workmen piled spoil behind an embankment before the Insane Asylum, raising 100 acres of marsh to two feet above ordinary high water. By the eve of World War I, the project was 94 percent complete: 8.1 million cubic yards were excavated, 13,202 feet of seawall built, and 450 acres of land reclaimed. A channel 21 feet deep stretched as far as the bridge.²⁹

Encouraged by the first decade of work, Congress in 1911 approved an Engineer plan to reclaim the river from the Navy Yard bridge

ARCE, 1905, II, 2611-13; 1906, I, 816.

28 (1) *H. Ex. Doc.* 30, 52d Cong., 1st sess. (1891). (2) *ARCE*, 1898, I, 1443-68. (3) *30 Stat.* 738. (4) See also *H. Doc.* 87, 55th Cong., 3d sess. (1898).

29 *ARCE*, 1903, II, 1040; 1916, I, 474.



Engineer Dredge on Lake Kingman, 1926.

northeast to the city line. At first a board composed of the district Engineer, Engineer commissioner, and the officer in charge of buildings and grounds hoped to create open-channel navigation to Massachusetts Avenue, and above that a slack-water system by means of a lock and dam. But further study showed that heavy silt in the upper river made slack water undesirable. Hence in 1916 they extended the open channel from the Navy Yard to the District line. To meet recreational needs, they planned a lateral lake along the western shore of the river. Spoil would be used to reclaim adjacent banks and to make artificial islands. This body of water was later named Lake Kingman in honor of a former Chief of Engineers. The future would bring parks, recreation areas, agricultural land, and an airfield to the area that the Washington District Engineers had reclaimed from the pestilential Anacostia flats.³⁰

As the Progressive Era drew to a close, the Engineers embarked on new projects even as they brought old ones closer to completion. In December 1915, the district Engineer reported that Aqueduct Bridge, long under repair, was unsafe and needed replacement. In May 1916 Congress voted funds for the new bridge — the Key Bridge of the future — and surveys began, with Engineers promising that plans would be prepared and land acquired as a first step toward construction. A new chapter in the long Engineer preoccupation with Rock Creek Park began, as

³⁰ (1) 37 Stat. 177, 970. (2) H. Doc. 1357, 64th Cong., 1st sess. (1916).

³¹ (1) ARCE, 1915, I, 1671-72; 1916, I, 1783-85 and III, 3597. (2)

Congress acted in 1913 to halt pollution and save the south end of the valley. Lt. Col. William W. Harts of the office of buildings and grounds took charge of the effort as executive officer of the Rock Creek Parkway Commission, developing a scenic drive to connect Potomac and Rock Creek parks. Then his office took over the area south of the Zoo. This left Rock Creek valley under three jurisdictions, since the Smithsonian controlled the Zoo, and in 1917 Harts suggested that the upper park as well as the parkway area be transferred to his office. Ordering the transfer in 1918, Congress provided the office with authority that it would use in later years to reshape Rock Creek Park into a major resource for urban recreation and beauty.³¹

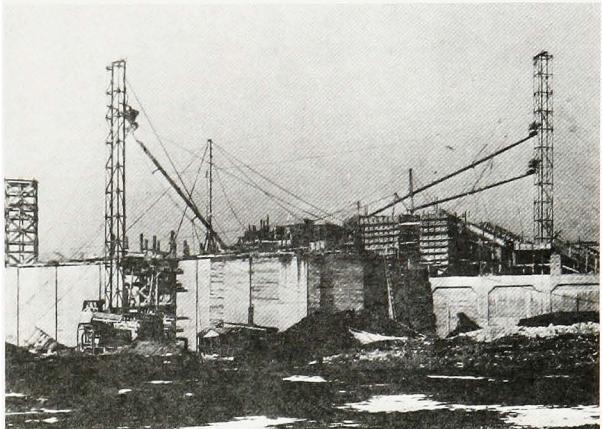
Meanwhile, under Harts's direction three important memorials approached completion. In 1913 Congress decided to commemorate the women of the Civil War era, appropriately enough by building a permanent headquarters for the American Red Cross. On 17th Street NW between D and E, the monumental structure rose under the direction of Colonel Harts and his successor, Lt. Col. Clarence S. Ridley. In 1914 Harts took on still another job as the commission to build the Arlington Memorial Amphitheater and Chapel appointed him its executive and disbursing officer. Under his direction an elliptical colonnade took form below the National Cemetery, enclosing an open-air amphitheater with a seating capacity of 5,000. Pushed vigorously during

³² Stat. 163. (3) Tindall, *Standard History*, 475. (4) 40 Stat. 650; 30 Stat. 570. (5) *Park Improvement Papers*, 111.

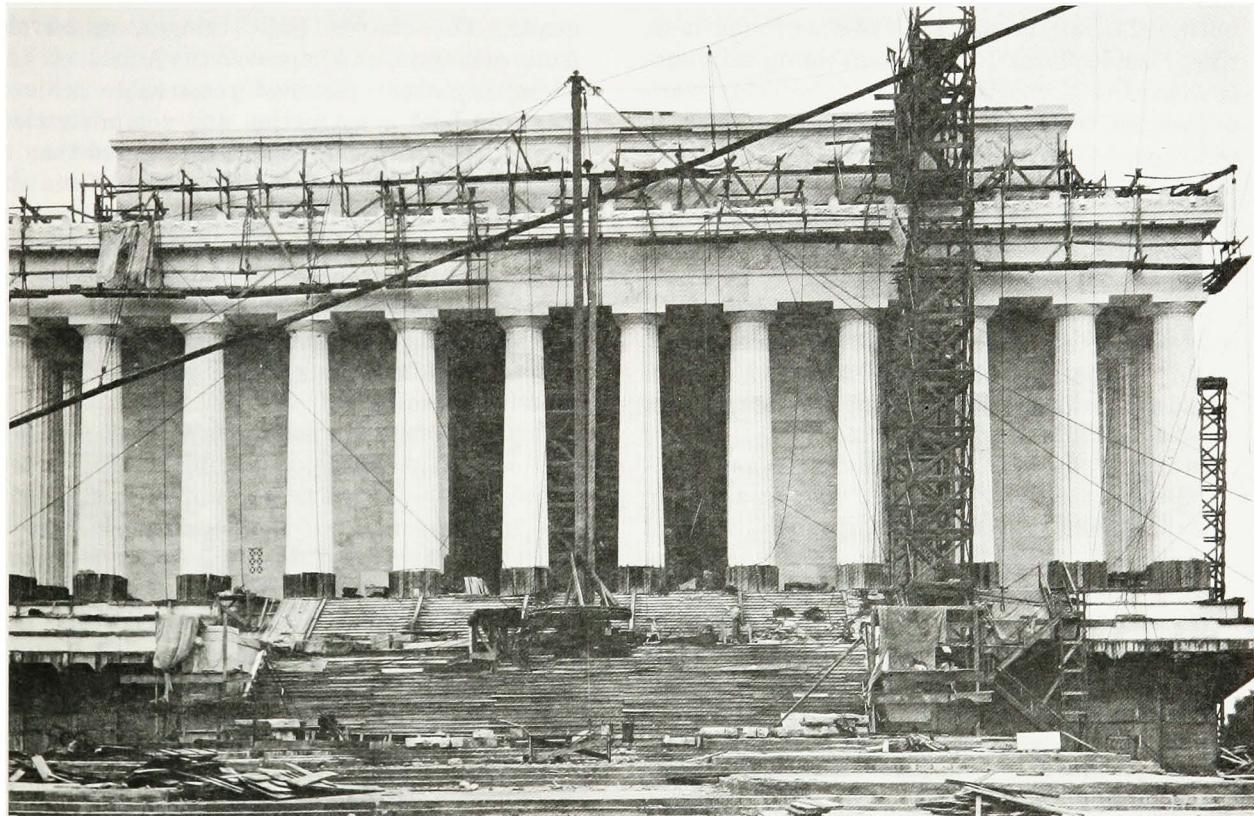
the remaining prewar years, the project was almost complete at the outbreak of war.³²

Most famous and troublesome of the Engineer-built monuments was the Lincoln Memorial. Recommended by the McMillan commission, the Memorial caused endless discussion among proponents of different sites. To settle the issue Congress in 1911 set up a commission of political heavy-weights, which included President Taft and House speaker Joseph G. Cannon. Cannon questioned the stability of the new-made land in West Potomac Park, declaring that "if placed in that swamp, [the Memorial] would shake itself to pieces with loneliness andague in no time." Despite such doubts the commission accepted the McMillan group's original site, at the western end of L'Enfant's grand axis and linked by the proposed Memorial Bridge to Arlington. The design favored by the commission—the work of architect Henry Bacon—provided for a Doric colonnade with a statue of the Civil War President and wall tablets inscribed with his most famous utterances. A double reflecting pool, designed by Bacon for the area between the Memorial and the Washington Monument, also won acceptance.

Again Harts took on the job of construction. A year of preliminary work pointed up the problems of building on reclaimed land. Harts found bedrock 37 feet down under layers of rotten rock, clay, gravel, sand, and loam. Driving 100 concrete piles reinforced with twisted steel rods, he built on this subfoundation a structure of concrete piers to support the terraced Memorial. As the colonnade took form, even Cannon was impressed. In 1915 he confessed to a proponent of the Potomac Park site, "I have been in many fights, some I have lost — many I have won — it



The Lincoln Memorial Under Construction, 1915.



Lincoln Memorial, Nears Completion 1917.

³² (1) ARCE, 1914, III, 3372; 1915, I, 1683; 1916, I, 1807; photo, 1917, III, 3726. (2) 38 Stat. 233. (3) U.S. Grant III, "The National Capital: Reminiscences of Sixty-Five Years," *Records*

of the Columbia Historical Society, LVII-LIX (1957-1959), 6. (4) S. Doc. 965, 62d Cong., 3d sess. (1912).



The Lincoln Memorial.

may have been better if I had lost more. I am pleased that I lost the one against the Lincoln Memorial."³³

The finished building was not to be dedicated until 1922, but the outbreak of war found it in recognizable form. Though scaffolding still surrounded the Memorial and the approaches were unfinished, the columns had been raised, the roof was complete, and the interior work was under way. By solving a technical problem, the Engineers had enabled an essential part of the McMillan plan to rise in the best possible location.

The nation's entrance into World War I interrupted a remarkable period in Washington's history. Committed anew to L'Enfant's ideal of a grand plan, the federal government began to ex-

tend and complete the monumental heart of the city. Using both federal and local funds, the commission government pushed forward projects that improved government, transport, and public health. The district built bridges, raised the Anacostia flats, and improved the Aqueduct. Yet, while Engineers recorded remarkable achievements in both construction and administration, their functions became more specialized than in the past. Control over design passed from the Corps to an able and self-confident architectural establishment which reshaped the official city into a monumental neoclassical form. But the Corps retained the responsibility of making much of this vision real, and, in their own fields, Engineers helped to reshape the face of progressive Washington.

33 (1) Quote from Reps, *Monumental Washington*, 159. (2) James A. O'Connor, "Foundations of the Lincoln Memorial in

Washington, D.C.," *Professional Memoirs*, VIII (1916), 38. (3) ARCE, 1917, III, 3726. (4) 37 State. 1022.

Chapter V

The Expanding City

On 26 January 1915, Louis Brownlow—newsman, Woodrow Wilson protege, and future leader in American city management—walked with Engineer commissioner Maj. Charles W. Kutz to the board room of the District Building. There Brownlow was sworn in as a commissioner. Already a friend of Kutz's—the two were members of a group of reporters and public servants called the "Doughnut Cabinet" that met daily for lunch at the Willard Hotel's grillroom—Brownlow, in the months that followed began to learn the art of government from the Engineer.

During the first months and indeed the first two years of my actual experience as a public administrator [he wrote], I found a teacher and a mentor, wise, kindly, and sympathetic, in the person of a... major of the Corps of Engineers of the United States Army, a graduate of West Point, a military man with a military mind, who still never permitted for an instant the rigidity of his training to overcome the flexibility of his mind and heart.

It was lucky for Washington that Brownlow learned quickly. In April 1917, American entry into the First World War swept the quiet capital into a new era, changing familiar civic landmarks forever.¹

Almost at once Kutz was reassigned to overseas service and Brig. Gen. John G.D. Knight came out of retirement to take his place. The commissioners faced a chaotic scene. Population soared by 50 percent. Wood and stucco office buildings—ugly, functional "tempos"—spread over parkland like daubs across paintings. The office of public buildings and grounds built three on the Mall, and the Navy put up more in West Potomac Park. War workers demanded housing, and a killer influenza epidemic swept the city when it was at its most crowded. Knight found himself competing with the war for men and materials to keep the city running; a man in frail health, he turned to Brownlow for assistance. Normal construction halted, shutdown of sewage and garbage service was narrowly averted, and pollution rose in the Potomac. Thousands of new mouths drank city water, and Knight refused to estimate per capita consumption, since nobody knew any longer how many people were in the thronged city.²

¹ Louis Brownlow, *A Passion for Anonymity: The Autobiography of Louis Brownlow* (Chicago: University of Chicago Press, 1958), 45, 22-23.

² (1) Green, *Washington: Capital City*, 237, 249. (2) ARCE,



Col. Charles W. Kutz.

Brownlow found himself longing for Kutz. Knight retired once more, and shortly afterward Kutz returned from France to command Fort Humphreys. Embroiled in a struggle to force rate schedules upon District utilities, Brownlow persuaded the Secretary of War to secure Kutz' appointment to a second term as District commissioner. "I shall never forget," said Brownlow, recalling a day in 1918, "the concerned, puzzled, and frustrated look on the face of one of the presidents of the utilities when he came into my office later that afternoon and I told him that Kutz would be back."

In alliance, the two commissioners proceeded to put through a minor administrative revolution. First they forced exceptionally low rates on the utilities. Then, at a time when fewer than 50 American cities were zoned, they imposed a complete zoning plan upon Washington. Dividing the District into regions according to height, area, and use of property, they worked with planner Harland Bartholomew to prepare maps that showed the location of every building. Controls on use seemed a startling violation of property rights, and Kutz and Brownlow decided to "do everything possible to take the community fully into our confidence and to enlist the help of the citizens generally."³ Maps in hand the commissioners walked every foot of street and roadway

^{1918, III, 3782; 1919, I, 2041. (3) Annual Report of the Commissioners of the District of Columbia, Year Ended June 30, 1918, H. Doc. 1431, 65th Cong., 3d sess. (1918), II, 6, 21-22.}

³ Brownlow, *Passion for Anonymity*, 94-97; quotes, 96-97.

in the District, addressed citizens' meetings, and met with their staff after 11 o'clock at night.

Under Kutz's chairmanship, and with advice from the Board of Trade, the plan took form. Pressure from developers to zone for apartment buildings in the residential area west of Rock Creek Park came to nothing when surveys showed that ample multiple-unit buildings existed elsewhere in the city.³ When final regulations were adopted on 30 August 1920, Kutz noted that the law marked "a far-reaching step in the advancement of the National Capital . . . and . . . its symmetrical and beautiful development."⁴

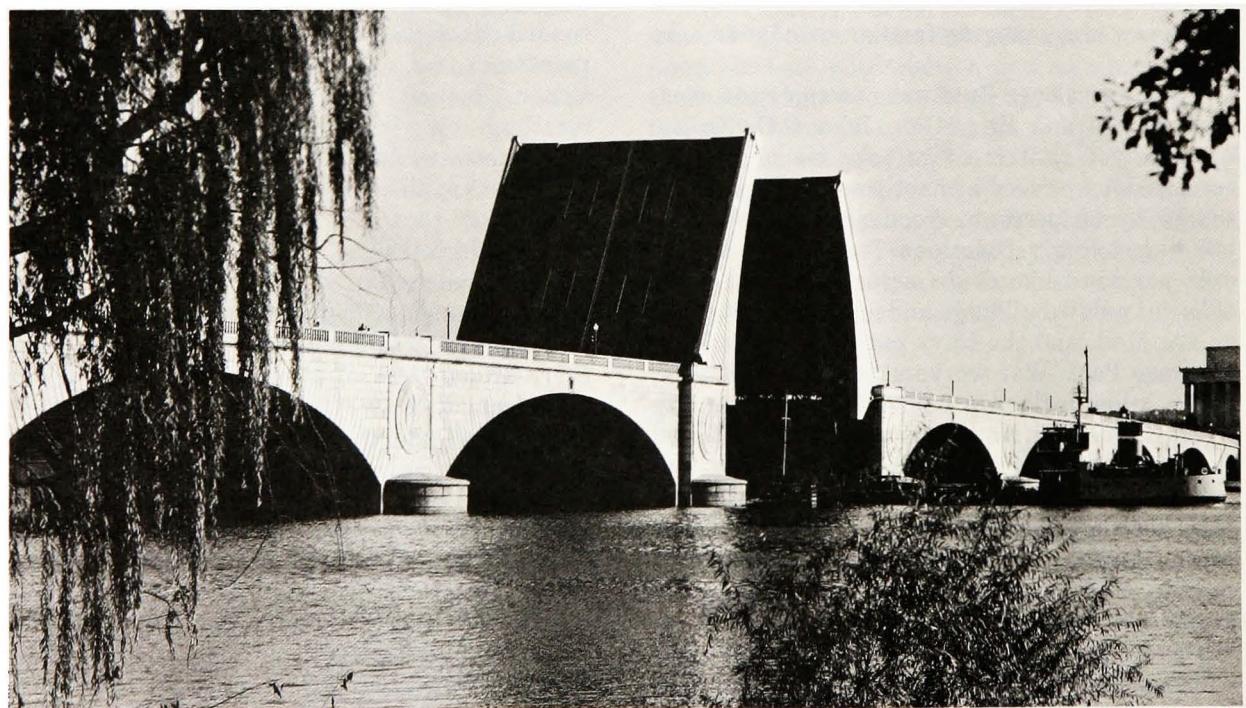
While the commissioners grappled with a changing city, the office of public buildings and grounds completed the monumental projects left unfinished at the outbreak of war. By October 1918, the colonnade of the Lincoln Memorial stood complete. In November 1919 work began on the reflecting pool. By this time Navy and Munitions tempos had risen on the north side of the Mall, and the architect's plan to build the pool in the shape of a cross had to be abandoned.

Even with the simpler design, Col. Clarence S. Ridley and civil assistant Charles A. Peters, Jr., faced construction problems resembling those which had confronted builders of the Memorial. Finding the foundation difficult to secure in hy-

draulic fill, they utilized a three-ply surface of cinders, membrane, and tile to maximize the mirroring effect and prevent seepage, while remaining flexible enough to adjust to continuous land settlement. A concrete apron and hinged joint connected the pliable bottom of the pool to the rigid coping, which rested on piles driven to bedrock. As the land settled, the pool maintained its fixed relation to the lines of the Memorial.⁵

Work begun in the Progressive Era now drew rapidly to a close. In 1920 Ridley arranged impressive ceremonies to dedicate the Arlington Memorial Amphitheater. Soon the completion of other major projects added two more of these rites. By 1920 sculptor Daniel C. French had finished his statue of Lincoln for the Memorial, and little work remained but landscaping and the construction of access roads. On 30 May 1922 a crowd of tens of thousands and many dignitaries viewed the dedication. A month earlier, Vice-President Calvin Coolidge had watched the unveiling of the Grant Memorial, the main groups of its elaborate bronze statuary at last complete.⁶

Postwar projects were in general more practical, less purely monumental than those of prewar days. One project, however, combined both characteristics—the Memorial Bridge to Arlington. Congress had long debated whether to construct the bridge; Engineers had urged it, and



Memorial Bridge in 1959.

4 (1) Quote from *Annual Report of the Commissioners.. 1921* (Washington, 1921), 10. (2) See also Scott, *American City Planning*, 195-196.

5 (1)ARCE, 1918, III, 380; 1920, I, 2028. (2) Charles A. Peters, Jr., "The Lincoln Memorial Reflecting Pool," *The Military*

Engineer, XV (1923), 209-13. (3) *The Lincoln Memorial* (Washington: U.S. Office of Public Buildings and Public Parks, 1926), 57.

6 (1)ARCE, 1920, I, 2046. (2) *Washington Post*, May 31, 1922, p. 1; Apr. 28, 1922, p. 1.

the Park Commission had made the bridge an essential part of its plan. A new Washington menace — automobile traffic — helped bring the structure at last into being. In November 1921 a spectacular jam occurred as dignitaries and visitors to the dedication of the Tomb of the Unknown Soldier tried to cross the Potomac on the highway bridge. Arriving on the west bank two hours or more late, the crowds found themselves entering the cemetery on a road that led past "a little race track . . . marshes lately used as the city dump, and . . . Agriculture Department barns, so designed and constructed as to thrust their ugliness upon one's attention with all the insistence of a spoiled child at table." Dedication of the Lincoln Memorial the following year revealed a great *rond point* situated at the edge of the river with no outlet, while across the Potomac the cemetery with its new amphitheater lay almost inaccessible. Less than two weeks after the dedication Congress voted \$25,000 to begin work on the bridge.⁷

The bridge commission, moribund since 1913, sprang to life. Under Lt. Col. Clarence O. Sherrill, architect W.J. Douglas and the firm of McKim, Mead & White designed a low bridge with broad graceful arches and pylons at either end topped by symbolic statuary. The associates also planned three other imposing projects: to transform B Street North into a grand boulevard — the future Constitution Avenue; to build a plaza connecting the bridge to the Memorial; and to develop Columbia Island in the Potomac as a park with commemorative pylons. In 1924 Congress accepted the plan, extending monumental Washington west to Lee mansion on the Arlington heights.⁸

Amid a squabble with contractors over the hiring of day labor, work began in 1925 under Sherrill and continued under his successor, Maj. Ulysses S. Grant III. Central to the problem of building the bridge was the need to make a practical structure conform to the design requirements of the Park Commission. The bridge had to bear the weight of granite facing and statues, and the bascule draw in the central arch had to be as inconspicuous as possible. Machinery must be packed away out of sight beneath the roadway. The draw itself, though neither the longest nor the widest in the world, had one of the largest areas to be raised; and the concrete deck and ornaments made it one of the heaviest and most costly ever built. While Grant, Nagle, and Strauss

Engineering Corporation — designer of the draw span — struggled with these difficulties, the Engineer district diverted the channel of the river beneath the draw, and cut and filled Columbia Island. Completed in 1932, the bridge successfully met both architectural and practical needs while bringing the city plan a step nearer completion.⁹

During wartime and postwar years the office of public buildings and grounds continued to extend and develop Rock Creek Park. While continuing to buy land for the parkway, Colonel Harts in 1917 urged the board of control to hire a landscape architect to prepare a master plan for development of the entire park. As one of its last actions before going out of existence, the board chose the firm of Olmsted Brothers and the Chief of Engineers accepted their plan shortly after the park was transferred to Harts's control. Departing from patterns set by earlier Olmsted plans for Central Park in New York and Washington's Mall, the firm recommended division of the valley into "use areas" and "growth areas." In the former, recreational features were discreetly introduced; in the latter, the natural forest was to be preserved except for necessary tending to prevent fire and disease. A corridor of natural forms, changing with the seasons, would curve through the densely settled District — a conception which the office of public buildings and grounds followed henceforth in developing Rock Creek Park.¹⁰

The growth of the office, however, began to lead toward its ultimate separation from the Corps. In many ways it functioned as an independent agency. Though the officer in charge was nominally subject to the Chief of Engineers and — in his care of the State, War, and Navy Building — to a supervisory commission, the control was largely a formality. As military aide to the President, the head of buildings and grounds had direct access to the Chief Executive, and was "effectually subject to the President's direct control." Queried by Congress, the Secretary of War raised no objection to a proposal to place the office formally under the President alone, and on 26 February 1925 Congress approved the reorganization. For eight years the new agency would function under an Engineer officer detailed to the duty, until the Interior Department took over the capital's parks in 1933.¹¹

It was through this agency — renamed the

(2) John L. Nagle, "The Arlington Memorial Bridge," *The Military Engineer*, XX (1928), 154-60. (3) *The Military Engineer*, XX (1928), 29-31.

10 ARCE, 1918, I, 1937; 1919, I, 2044.

11 (1) Quote from H. Rept. 1363, 68th Cong., 2d sess. (1925), 2. (2) 43 Stat. 983.

7 (1) Quote from Fine Arts Commission rpt, in Green, *Washington, Capital City*, 282. (2) 42 Stat. 637.

8 (1) Oliver Peck Newman, "The Arlington Memorial Bridge," *American Review of Reviews* (May 1925), 495. (2) 43 Stat. 974.

9 (1) *Constructor*, VII (June 1925), 20; (Dec. 1925), 27-28, 47, 49.



U.S. Grant, III, in 1907.

office of public buildings and public parks of the national capital — that Engineer Maj. Ulysses S. Grant III rose to prominence in Washington. Taking over the office in 1926, the grandson of the 18th President soon established himself as a press agent's dream, a born "character," a hard worker, and a demanding taskmaster. Stories about him grew into a personal legend, fed by his skill at publicity and a rich supply of quirks and personal oddities. Impatient with fools and visiting firemen, he wore heavy underwear to work in winter so that he could turn off the office heat; unwelcome visitors then fled to warmer regions. In 1928 he got the Washington parks into the newspapers by declaring a "war on neckers." Park users were asked to abide by a pledge that encouraged fire prevention and forbade littering, flower picking, and — the item that caught newsmen's eyes — any "display of amorousness" that might "set a bad example for children" in the puritanical Washington woods. Meantime, black citizens came to know a harsher side of Grant, as he sanctioned a Ku Klux Klan rally on government property, tried to segregate picnic places in Rock Creek park, and barred blacks from the bathing beach at the Tidal Basin.¹²

But Grant had ability as well as prejudices, and fought effectively for public recreation and an extended park system. "I think," said a civilian planner who worked under him for many years, "he had the highest standard of public service of



And as a Major General, in 1944.

anybody I've ever known."¹³ As head of public buildings and parks, Grant removed as many tempos as he could and cleared and developed the Mall. As a planner he later took a leading role in buying land for Rock Creek and Potomac parkway and worked with the firm of Olmsted Brothers on the parkway design. When necessary, Grant stood up to his fellow officers. He successfully opposed district Engineer Maj. Breton B. Somervell and the Chief of Engineers to preserve a stretch of Potomac shore for parks rather than a power plant.¹⁴

He also carried out a large-scale reconstruction of the White House which Sherrill had begun. After investigations in April 1923 showed



Building Rock Creek and Potomac Parkway Seawall, 1930.

12 (1) Charles W. Eliot II, "U.S. Grant, 3rd: A Word of Personal Reminiscence," *Records of the Columbia Historical Society*, LXVI-LXVIII (1966-1968), 364. (2) *Annual Report of the Director of Public Buildings and Public Parks, 1926* (Washington, 1926), 6-7. (3) *Washington Post, Star, and News*, Aug. 10, 1928. (4) Green, *Washington, Capital City*, 328-29, 383.

13 Interv. with John Nolen, Jr., Washington, D.C., 1 Feb. 1974.

14 (1) U.S. Grant III, "The National Capital: Reminiscences of Sixty-Five Years," *Records of the Columbia Historical Society*, LVII-LIX (1957-1959), 10-11. (2) Ltr. Grant to Harland Bartholomew, 21 Oct 1953, Grant collection Columbia Historical Society, Washington, D.C. (3) Eliot, "U.S. Grant, 3rd," 364.

the mansion's roof near collapse, President Warren G. Harding instructed Sherrill to begin repairs during his own absence on an Alaskan trip from which he did not return alive. After examination showed that "the trusses carrying the roof are no longer acting as trusses, but are now merely a series of beams and struts," Grant warned the new President, Calvin Coolidge, that the whole roof should be replaced at a cost of \$500,000. But the Vermonter refused to pay the cost no matter what the danger. "If it is as bad as you say it is"—an Engineer later summed up the President's attitude—"why doesn't it fall down?" Consequently, Grant and the supervising architect of the Treasury carried out a less drastic renovation which included rebuilding the roof and third story, fireproofing the interior, and painting. With advice from consulting architect William Adams Delano, the work was successfully completed in 1927.¹⁵

Grant also became a key figure in the development of the National Capital Park and Planning Commission. Systematic land acquisition had long been demanded by Harts and other park enthusiasts to insure the system's growth in the face of rising land prices. Urged on by powerful advocates, including the Chief of Engineers and the Washington Committee of 100 headed by District resident Frederick A. Delano, Congress on 6 June 1924 set up a National Capital Park Commission consisting of three Engineers, two members of Congress, and two civil servants. Money was to be provided by a yearly appropriation equal to one penny for every inhabitant of the continental United States, and the commission was empowered to acquire land by purchase or condemnation. But first appropriations were less than promised.

Under continued pressure from park advocates, Congress in April 1926 enlarged the commission by providing for appointment of four leading District citizens, renamed it the National Capital Park and Planning Commission, and gave it authority to plan for the city's growth. The commission was to plan Washington's street system as well, taking over duties which the highway commission had carried out since 1890. Delano—whose nephew, Franklin D. Roosevelt, would soon be President—chaired the commission and Charles Eliot II was the city planner. Major Grant was secretary and executive officer.

15 (1) See ltrs: W.C. Lyon to Supt Archt of the Treas, 23 Apr 1923; Geo B. Christian, Jr., to Sherrill, 18 Jun 1923; Delano to Grant, 24 Oct 1927; and Grant to Delano, 4 Nov 1927. (2) Rpt, Charles A. Peters, Jr., to Grant, 12 Aug 1925. (3) Specs, 19 Nov 1926, pp. 6-7. All in PBG: White House Corres, NA, RG 42. (4) For Coolidge paraphrase, see D.H. Gillette, "Reconstruction of the White House." *The Military Engineer*, XLV (1953), 8.



Repairing the White House, 1926.

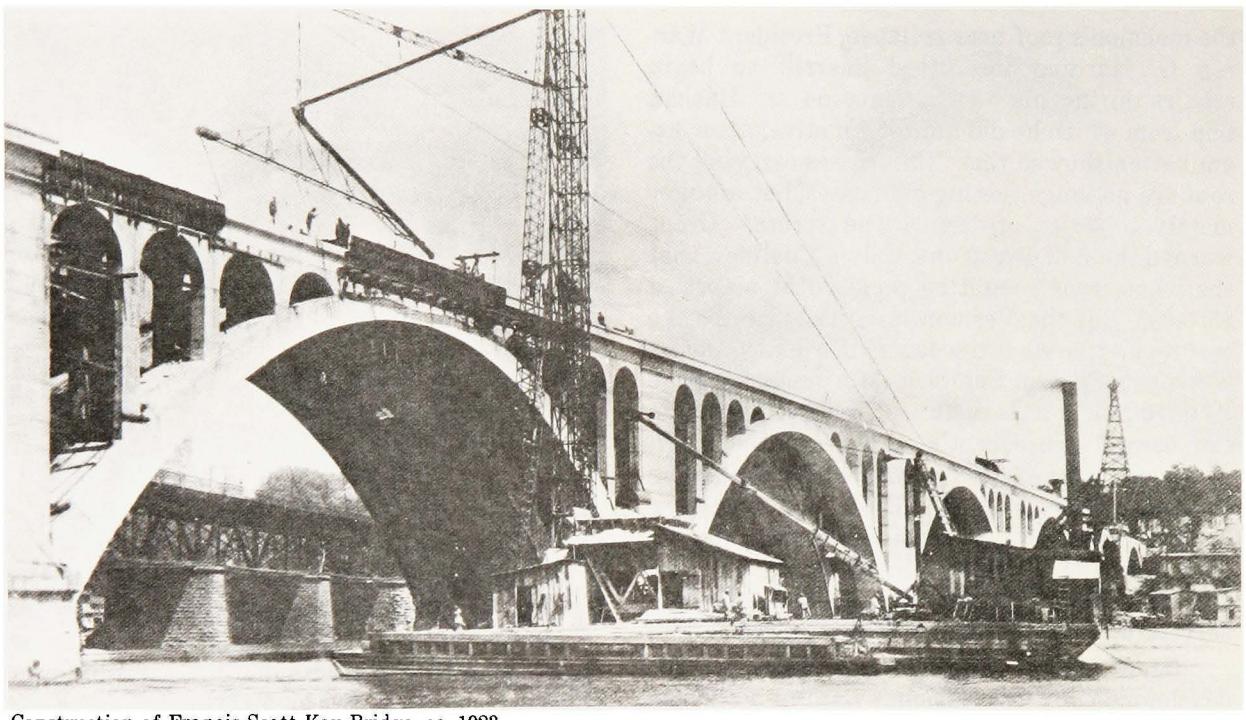
His relationship with Presidents Coolidge and Hoover was sufficiently close that Eliot credited him with "managing the White House" in regard to commission projects. Soon the commission took the first steps toward area-wide planning, working with a similar suburban planning commission set up in 1927 by Maryland.¹⁶

Meanwhile, in the heart of the District a new era of major construction opened in 1926 as Congress voted funds to enable the public buildings commission to develop the Federal Triangle. Under guidance from the supervising architect of the Treasury, massive government buildings began to rise in the angle between Pennsylvania and Constitution Avenues, on the site suggested by Bingham in 1899. Grant was executive and disbursing officer of the public buildings commission, a position that strengthened his role as an influential administrator in the shaping of Washington.¹⁷

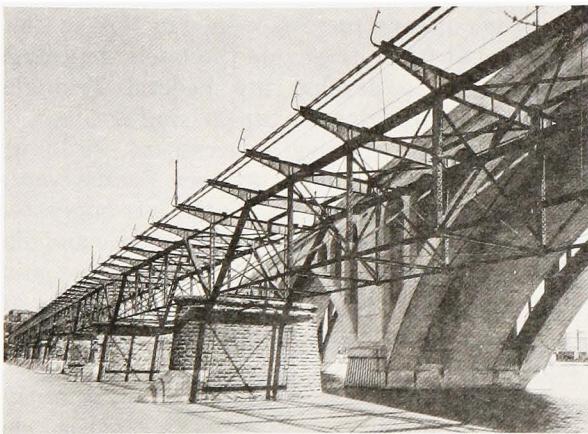
In the long range, the new planning initiatives would prove important to Washington. The Engineer district, meanwhile, carried on projects aimed at meeting more immediate needs. Most significant were Key Bridge, the continuing work on the Anacostia, and improvement of the Aqueduct. In August 1917 workmen launched the first frame cofferdams for construction of the bridge between Georgetown and Rosslyn. Driving of sheet piling followed. Coming out of retirement to head the wartime district, Col. Walter L. Fisk encountered the usual problems of the time: the architect, Nathan C. Wyeth, left the project to take a commission in the Army; labor and materials were hard to come by, and the Engineers were depleted by military demands.

16 (1) 43 Stat. 374, 463. (2) Eliot quote in Gutheim, *Worthy of the Nation*, 187. (3) Green, *Washington, Capital City*, 284-87. (4) U.S. Grant III, "Planning the National Capital: Objectives and Problems of Attainment," *Trans. ASCE*, CXVII (1952), 122.

17 S. Doc. 240 69th Cong., 2d sess. (1926), 6.



Construction of Francis Scott Key Bridge, ca. 1923.



Aqueduct Bridge, Partly Demolished, Beside Key Bridge, 1931.

But under Fisk and his successor, Maj. Max C. Tyler, the graceful bridge took form; Tyler often gave riverbankers a show by checking construction from the tops of the arches. In 1925 the 90-year-old Aqueduct Bridge was closed to traffic; the Washington & Old Dominion Railway removed its track; the commissioners salvaged railings, floors, and stringers; and the district removed some of the masonry for use in the new Anacostia floodwalls. At the same time, the district transferred a completed Francis Scott Key Bridge to the municipal government.¹⁸

The long-term Anacostia project moved forward again after a lapse during the emergency. Wartime necessities had made some changes in

the area; private vegetable gardens still covered acres of reclaimed land, and a temporary grant of space to the Signal Corps for an "aeroplane flying field" became permanent as the installation grew into Bolling Field. In the river channel, dredging continued to open the upper river to deep-draft shipping and by mid-1918 was 24 percent complete.

That same year Congress combined the upper and lower river projects into one and made the new land part of the District of Columbia's park system, naming it Anacostia Park. By mid-1920 the combined project was nearing the halfway mark. Sanitary conditions improved, deep-draft vessels used the river as far north as Pennsylvania Avenue, and a yacht harbor relieved the jam of pleasure craft in the Washington Channel. In 1925 part of the reclaimed land was transferred to the director of public buildings and public parks for improvement, and another portion set aside as a site for the Agriculture Department's planned national arboretum and botanical garden.¹⁹

Improvement of the city's water supply system also went forward. Escalating wartime population had placed heavy strains on the Aqueduct, since the single conduit from Great Falls could rarely be emptied for examination and repair. The district took a first step in 1918 when Fisk persuaded Congress to vote money to meter all government offices and federal reserva-

18 (1) ARCE, 1918, I, 1912-13; 1925, I, 1913-17. (2) Walter L. Fisk biog. file, EHD. (3) 43 Stat. 1338.

19 (1) ARCE, 1918, I, 512; 1923, I, 1906-08, 1990-93; 1919, II,

2390; 1920, I, 2005-06; 1925, I, 1907-08; 1924, I, 1994. (2) See also S. Doc. 37, 68th Cong., 1st sess. (1923).

tions. But, as Engineers had long warned, a second conduit was needed. Arguments for the improvement revealed again how much the city had grown during the war. In 1919 Fisk declared that average daily consumption of water had increased by 25 percent since 1916; in the two war years alone the increase was 9 million gallons a day. With the fighting ended, no drop in consumption was expected, but rather a slower rate of increase.²⁰

Warning that the Federal District would run short of water by 1925, Fisk recalled three proposals made by the Corps before the war: to dam the Potomac above Chain Bridge, to parallel Meigs's conduit from Great Falls, or to dam the Patuxent River near Columbia Turnpike. Hoping to avoid the costs of the Potomac dam and to create an entirely independent source of supply, the Chief of Engineers recommended the Patuxent scheme. Congress asked for further study, and on 30 June 1921 approved a plan by Maj. Max C. Tyler for a parallel conduit from Great Falls. The lawmakers appropriated \$200,000 to begin the estimated \$8.7 million project, later splitting \$3.2 million of the cost 60/40 with the District of Columbia. Included were a new intake at the falls, the conduit, a rapid sand filtration plant, a hydroelectric plant to produce power for pumping the filtered water, a pumping station, two storage reservoirs, and the necessary pipelines.²¹

Workmen now blasted a trench through the granite and clay 30 feet center-to-center from the old conduit. Within the cut the Engineers built a horseshoe-shaped concrete tunnel 10 feet high and 10.5 feet broad at its widest point. At Cabin John Run an inverted siphon 800 feet long carried the flow to the eastern side. By doubling the flow of potable water, the new conduit facilitated upkeep and repair, and guaranteed a continuous flow in the event that accident or malice disrupted either line. Begun under Tyler, the improvements were completed by Maj. Brehon B. Somervell in 1928, bringing optimistic forecasts that District water problems were solved until 1980.²²

The less sanguine reports of the Engineer commissioners warned that the increase in traffic was destroying city and suburban roads and that the growth of new housing developments was outrunning their capacity to supply roads and services. Yet in 1928 the long Engineer campaign for interceptor sewers to control

²⁰ ARCE, 1918, I, 1919; 1919, I, 2021.

²¹ (1) ARCE, 1919, I, 2022-29; 1925, I, 1928-29. (2) See also H. Doc. 347, 61st Cong., 2d sess. (1913); H. Doc. 1400, and H. Doc. 1266, 62d Cong., 3d sess. (1913). (3) 42 Stat. 94, 709, 1367.

²² (1) Philip O. Macqueen, "New Aqueduct for the National Capital," *The Military Engineer*, XVIII (1926), 110-17. (2)



Parallel Conduit, Washington Aqueduct, 1923.

stream pollution succeeded, and sewer lines were extended into suburban Maryland with funds supplied by the Washington Suburban Sanitary Commission. In the face of unprecedented growth, the Engineers had registered major accomplishments in upgrading the District's physical plant. It was possible for most Corps members to feel that they were a bit ahead of the game.²³

But the Depression that hit the nation in October 1929 brought in its wake a new spurt of governmental expansion, followed at once by civic growth, with all its attendant problems. Again population soared; the federal payroll in Washington rose 50 percent in the first two years of President Franklin D. Roosevelt's New Deal. The city spread outward, into northern Virginia via the Key, Memorial, and Highway Bridges, and into suburban Chevy Chase and Silver Spring in Maryland. As the private economy faltered, government expenditures rose ever higher, and the unemployed found temporary jobs under New Deal relief agency banners. In contrast to the war, the Depression brought new hands to work for the city.²⁴

Using these work forces and public work relief funds, the Engineer commissioners helped to bring some benefit out of the nation's calamity. Guided by the District highway department, Public Works Administration (PWA) workers laid hundreds of thousands of yards of roadway, built traffic tunnels, and graded and beautified roadsides. With funds allotted by the federal emergency administration of public works, the commissioners built new sewage lines and constructed the Blue Plains sewage-treatment plant.

Much of the new work fell to Lt. Col. Daniel I. Sultan and Lt. Col. David McCoach, Jr., Schmitt and Macqueen, "Washington Aqueduct," 207-09. (3) History of the Washington Aqueduct, 55-56.

²³ (1) Annual Report of the Commissioners . . . 1922 (Washington, 1922), 6, 18; 1928, 48, 58. (2) Green, *Washington, Capital City*, 280.

²⁴ ARCE, 393-95, 398-99.



Anacostia Waterfront, 1936.

Engineer commissioners from 1934 to the year of Pearl Harbor. Sultan opened construction of the municipal center planned for Judiciary Square, using his own and Works Progress Administration (WPA) work forces. McCoach funneled PWA funds to the District municipal architect, permitting construction of the complex to go forward. The commissioner also directed the building both of the new Chain Bridge north of Georgetown and the nine-span John Philip Sousa Bridge across the Anacostia at Pennsylvania Avenue.²⁵

Similarly, district Engineers used Civil Works Administration labor gangs on the Anacostia project, building floodwalls and levees and improving Lake Kingman and East Lake. In 1938 the government purchased the 8.5-acre Shaw lily ponds in Northeast Washington, adding to the attractions of the Anacostia area the park to be known as Aquatic Gardens. By the start of World War II, the 1,100-acre Anacostia Park proper would be more than 90 percent complete.²⁶

The Depression also brought a new district project to improve the Washington Channel. Sheltered by the peninsula of East Potomac Park and flushed by the Tidal Basin, the channel had become an informal recreation spot, with wharves for oyster and melon boats, and landings for river streamers that made moonlight trips to Baltimore and Norfolk. But buildings had slipped into picturesque decay, and only the federally owned wharves were in good condition. After long urging by the Engineers, Congress authorized an examination and survey of the area. In 1930 the Washington District proposed a \$3.7 million plan to refurbish the waterfront while preserving local landmarks like the Capital Yacht Club and the fish market. But the new

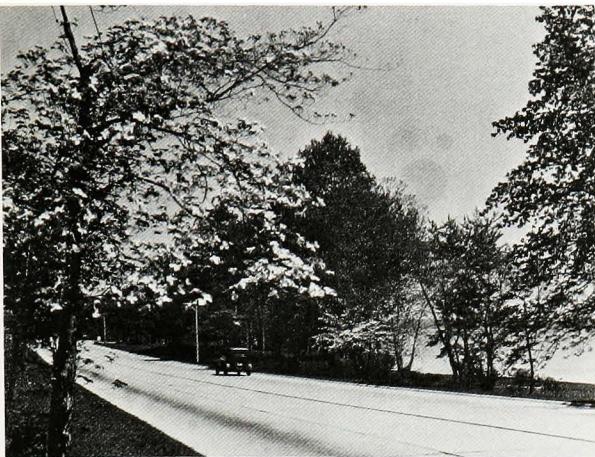


Washington Channel in 1940.

25 (1) *Annual Report of the Commissioners* . 1935 (Washington, 1936), 63, 74, 76. (2) H. Paul Caemmerer, "The Corps of Engineers and the Capital City," *The Military*

Engineer, XLV (1953), 209.

26 ARCE, 1934, I, 1521; 1935, I, 1729; 1939, I, 2290; 1941, I, 2279.

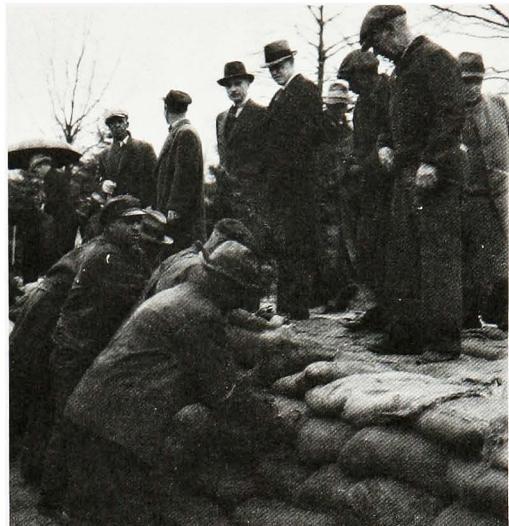


Mount Vernon Highway, 1933.

wharves and marinas were only partially complete when the outbreak of war ended work.²⁷

Loss of old duties and acquisition of new ones signaled changing times for the Engineers. In 1933 the office of public buildings and public parks was transferred to the Interior Department, ending its eight-year existence as an independent agency. For the first time since 1867 Engineer officers no longer ran the federal reservations. As the decade drew to a close, however, new duties grew from the expansion of the city and the approach of war.²⁸

In 1938, at President Roosevelt's urging, the Civil Aeronautics Authority chose a site for a major new Washington airport. Gravelly Point, a low-lying area on the Potomac's west bank, required extensive filling before construction could begin. But the point had advantages. Behind it stretched a marshy, lagoon-dotted region, where in 1932 district Engineers Somervell and Maj. Joseph D. Arthur had built the Mount Vernon Highway. Though the airport project required part of the new road to be realigned, it gave air travelers direct access via the Highway Bridge to downtown Washington. District Engineer Col. Robert S. Thomas took charge, and a variety of New Deal agencies joined in, including the WPA, now headed by Harry Hopkins's successor, Engineer Col. Francis C. Harrington. During thirteen months of 24-hour-a-day labor, work crews pumped 20 million cubic yards of fill behind the dikes, and then graded, landscaped, and paved the field, brought in water and sewage lines, and built hangars and administration buildings. In September 1940 Roosevelt dedicated



Lt. Col. Francis C. Harrington and Harry Hopkins (Center, Above) Watching Workmen Erect an Emergency Levee, Washington, 1936.

National Airport. With super-length runways to accommodate the heaviest projected planes, the airport was the world's most spacious, and in years to come served as a model for many fields throughout in the world.²⁹

By this time preparations for war occupied Washington. The tasks of the 1930's — civil projects carried out with the aid of relief-agency funds — gave way to massive new duties in military construction. On 1 December 1941 the Engineers took over the construction responsibilities of the Quartermaster Corps, including Bolling Field, now a 600-acre base. Until the end of the war Col. William J. Barden and Col. John M. Johnson directed the building of runways and mess halls, laboratories and boiler plants, a broadcasting studio, electrical and sewage systems, family housing and recreational facilities. Under district supervision the PWA built an 8-mile highway to connect Bolling to Camp Springs Army Air Field (later Andrews AFB). The district also worked to keep ground transport moving, building between 1942 and 1946 an emergency railroad bridge across the Potomac, and four temporary highway bridges — one at 14th Street, two at Roosevelt Island, and one across the Anacostia above the Navy Yard. In 1942 the district also took over construction work at Walter Reed Army Medical Center, where it built laboratories, wards, a gymnasium, and a pool.³⁰

paginated].

27 (1) Duryee, *Corps in the Nation's Capital*, 75-81, 97. (2) ARCE, 1930, I, 497, 530; 1935, I, 3611 1940, I, 475; *Waterfront, Washington, D.C.* (Washington: U.S. Engineer District, 1940), 1-4. (4) 44 Stat. 1031. (5) For earlier Engr proposal, see J.E. Wood, "Improvement of Washington Channel," *The Military Engineer*, XV (1923), 435-37.

28 Exec. Order 6166, 10 June 1933, in *Executive Orders: President Hoover and President Roosevelt* (Washington, 1933) [not

94-95, 117-20].

30 Lenore Fine and Jesse A. Remington, *The Corps of Engineers: Construction in the United States* (Washington, 1972), 471-72. Hereinafter cited as *Construction in the United States*. (2) Duryee, *Corps in the Nation's Capital*, 109, 117-20.



Workmen and Dredges Building National Airport, 1939.

Dwarfing other wartime construction in the capital was a gigantic new project on the west bank of the Potomac.³¹ In a move to gain much-needed space for the War Department, Engineer Somervell, now a brigadier general, proposed in the summer of 1941 to bring into a single massive building 24,000 employees scattered through 17 locations in the District and Virginia. In one hectic weekend, architect George E. Bergstrom and Engineer Lt. Col. Hugh J. Casey sketched plans for a three-storied, five-sided structure capable of housing 40,000 workers. Originally planned for a site near old Hoover Airport, the Pentagon was relocated close to Memorial Bridge when Chief of Engineers Lt. Gen. Eugene Reybold became worried about securing a foundation in the Potomac floodplain.

In its new site, however, the building intruded on the pattern formed by Lee Mansion, Memorial Bridge, and the Lincoln Memorial. Protests rose from the National Capital Park and Planning Commission, the American Institute of Architects, and the Fine Arts Commission. President Roosevelt first approved the site, then rejected it. The planners moved the site southward, breaking ground three quarters of a mile downstream on Agriculture Department land that had served previously as a Quartermaster depot. Scaled down to provide for only 20,000 workers, the Pentagon began to take form.

Transferred to Corps control in December, the project moved rapidly to completion. Wartime shortages met an innovative response as Col. Leslie R. Groves eliminated steel in favor of a structural framework of concrete, provided ramps instead of elevators, and installed concrete drainpipes and fiber ducts. Helped by a variety of time-saving devices, workmen had two sections of the building ready for use by 30 April 1942. By the end of May, 1 million square feet of office space were ready.

But unceasing demands for speed helped

31 Following para based on: (1) Fine and Remington, *Construction in the United States*, 415, 435. (2) 55 Stat. 685.

32 (1) 55 Stat. 787. (2) Fine and Remington, *Construction in the*



Col. Leslie R. Groves as a Quartermaster Officer, 1941.

create a high on-job accident rate, while cost overruns drew criticism from the press and congressional investigators. The sheer size of the building and the notion that the military was feathering a plush nest for itself at taxpayers' expense drew frequent barbs. *Time* magazine invoked L'Enfant's ghost to fight the project and declared that Washington's air was "blue with protests." *Life* called the Pentagon a Cecil B. DeMille backdrop, a "colossal pain in the neck" to everyone but Secretary of War Henry L. Stimson, who was pictured living in luxury while lesser employees trekked wearily through endless corridors. Washington jokers laughed at the remoteness of the structure, separated by the Potomac from the shopping and dining facilities of downtown.³²

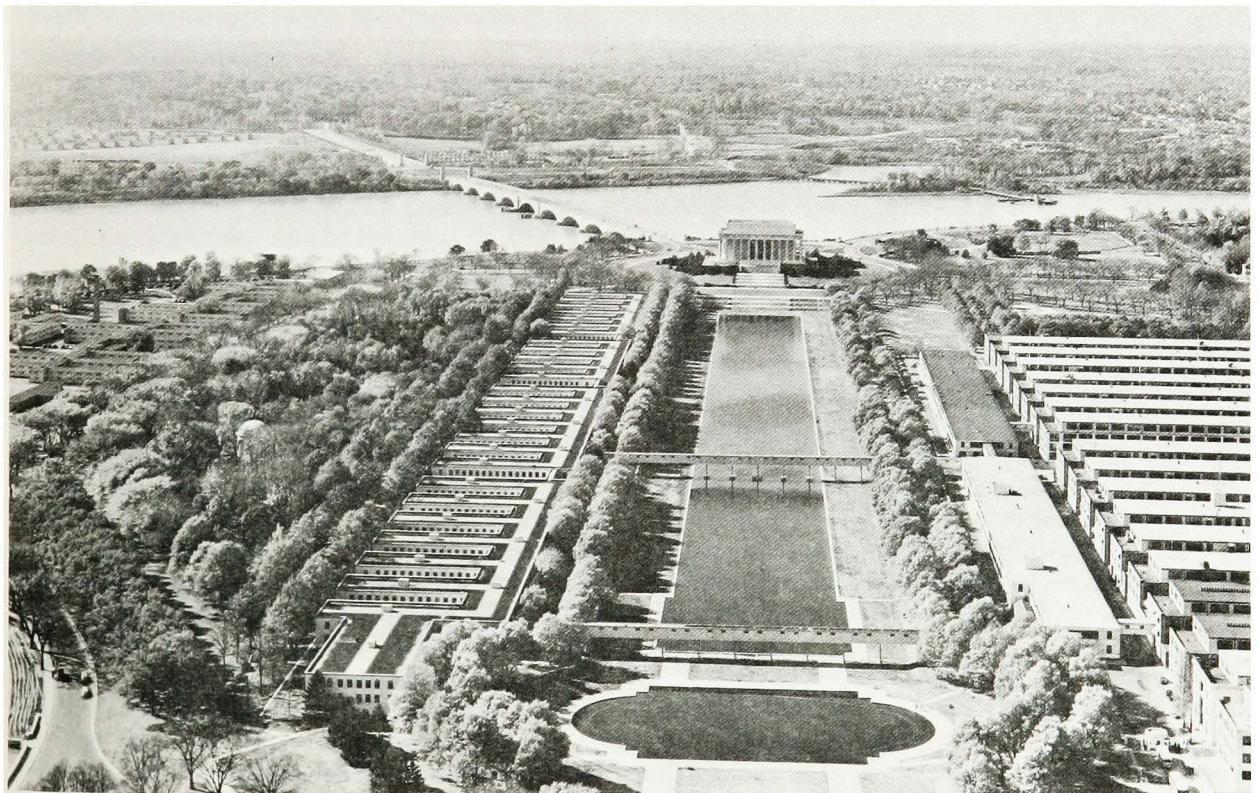


The Pentagon Under Construction.

United States, 438, 514. (3) *Time*, XXXV (1941), 58-59. (4) *Life*, XIII (Dec. 21, 1942), 83-84.



The Pentagon in 1959.



"Tempo's" Around the Reflecting Pool, 1943.

Architecturally sterile, the Pentagon was a significant event in the decentralization of Washington. Under its much-denounced "35-acre roof" a self-contained community took shape

with bus concourse, cafeterias, post office, bank, shops, telegraph office, and hospital. By 1944, employees read their own weekly newspaper, had a police force walking beats in the corridors, com-

municated through a telephone switchboard able to serve a city of 100,000, and gave a livelihood to a maintenance force of plumbers, carpenters, and electricians. In the midst of war, the Pentagon hinted at postwar developments where work space would be combined with facilities for shopping and recreation in a suburban setting.³³

"Washington in wartime," said a wartime arrival, Col. Dwight D. Eisenhower, "has been variously described in numbers of pungent epigrams, all signifying chaos."³⁴ But the impact of World War II only climaxed a generation of rapid change and expansion which began with World War I and continued through the great Depression. As Americans responded to unprecedented national emergencies, their government grew, and with it grew the capital. For the Engineers, growth meant that parts of the city's physical plant became obsolete or dangerously overloaded. Their responses included zoning

laws, new bridges, roads, and sewers, a new tunnel for the Aqueduct, and their work on the planning commission. Monumental projects meant less than in the quiet days before the emergency, but the Engineers finished incomplete projects and directed the building of Memorial Bridge and the Mount Vernon highway — structures which combined practical and symbolic aims. Lost to the Corps was the office of public buildings and public parks, whose 1933 transfer to Interior ended Engineer responsibility for the upkeep of monumental Washington and its green setting. Wartime projects, including the massive and unique Pentagon, were basically functional works built under emergency conditions. More than ever, the Engineers in Washington had become administrators and planners grappling with the everyday problems of a city in the grip of tumultuous growth.

33 "Pentagon Building," 333.5 Pentagon Bldg., Washington National Records Cntr, Suitland, Md.

34 Dwight D. Eisenhower, *Crusade in Europe* (Garden City: Doubleday & Company, Inc., 1955), 16.

Chapter VI

Metropolis

One day in 1960 Brig. Gen. Frederick J. Clarke and his wife were speaking with Elizabeth Kutz. Widow of the three-time Engineer commissioner whose last term had ended in 1945, she was a "very tiny little lady with a black ribbon with a cameo always on her neck, a very precise little lady." Now she asked commissioner Clarke, "Tell me, dear, are the Eisenhowers treating you properly?" Clarke replied that he supposed so. He and his wife had been invited to the White House for "one of those big mass affairs, a musical," and had shaken hands with the President. Elizabeth Kutz remembered a different Washington.

"You know," she said, "when Papa [Colonel Kutz] and I were there, we went to the White House at least every two weeks for lunch with the President. We were the city fathers. And we were always being asked to the White House for things, to represent the city, and had a very close relationship with the President." Reflecting later on her words, Clarke said that "this [relationship] disappeared as government got bigger and bigger . . . My fellow commissioners, while I was [in office], never got to see the President on any of the city's problems."¹

Growth had doomed the cozy, company-town atmosphere of the old Washington. The White House became more remote. Yet the changing city demanded strong leadership as prewar growth intensified, creating in postwar years a sprawling metropolis on the Potomac. In 1920 the District contained 72 percent of greater Washington's inhabitants; by 1950 it held only 53 percent, and by 1960, 37 percent. L'Enfant's city was becoming the center of a formless conurbation extending into two states and four suburban counties. As the District became an "inner city," changes already noticeable before the war acquired new and critical significance.²

In the 1930's, nonwhite population climbed a percentage point in the District while falling in every suburban county. As poor blacks moved into the city, affluent whites used the mobility offered by the automobile to leave it for surrounding areas. In 1939 Americans owned 21 million cars, and the postwar end of gasoline rationing and return of production lines to peacetime uses promised that the number would vastly increase. The growing federal bureaucracy — some 225,000 to 250,000 fulltime employees

¹ Quotes in these paras from interv with LTG Frederick J. Clarke, USA (Ret), Washington, 17 Jan 1974.

² Green, *Washington: Capital City*, 505.

³ (1) Scott, *American City Planning*, 361-62. (2) Caemmerer,



Brig. Gen. Frederick J. Clarke.

using 3.5 million square feet of office space — meant more homeowners for the suburbs and more cars for the roads. In 1939, New York World's Fair planners had forecast that within a generation America's midtown would consist of glass-walled skyscrapers served by multilevel expressways. In the postwar years that vision began to come true.³

The image of the planners was one of progress, but the movement of the middle class away from the cities and of the poor toward urban ghettos stamped a dark reverse upon it. Slums were not new to Washington. In the 1940's they remained large and obtrusive. Beneath Capitol Hill, 23,000 poor whites and blacks of the Southwest inhabited shanties and aging row houses only half of which had inside toilets. John Dos Passos described the area one hot night during the war, the "shady streets choked with trees," the ragged blacks, the wilted white neighborhoods of narrow brick houses, and the swarming children. Washington's future was inextricably tied to these people. Bound by poverty and racial covenants, they could not escape to the suburbs.⁴

Facing the severe challenges of uncontrolled growth, a vanishing middle class, and the ticking racial bomb, the government of the Federal District showed both strength and weakness. One of its best features was the presence on its many governing boards of men and women who would

³ Washington, 335. (2) Green, *Washington, Capital City*, 399.

⁴ John Dos Passos, *State of the Nation* (New York: Houghton Mifflin Co., 1943), 101.



Washington Slum-Dweller, 1935.

have had little opportunity in the politics of an ordinary city — people with expertise and enthusiasm and social standing. Responsibility for running their nation's capital encouraged them to put forth their best efforts; many were inspired by the vision of a planned community. But Congress's creation of autonomous boards to handle civic functions had gravely depleted the power of the commissioners. Already in 1928 reformers had counted 25 independent or semi-independent agencies sharing power with the board of commissioners. In postwar days capital wits wore out their ingenuity to describe the system: "a monster with 50 heads, snapping at one another," said one, while another saw "an ingenious system of committees which veto each other's recommendations." Commissioner Clarke would sum up the practical result in an epigram: "The history of Washington is the history of delay."⁵

Delay and confused lines of authority helped spur efforts toward home rule. Attempts in 1939 by some residents to win an elected government had failed in the face of local divisions and con-

5 (1) Quotes in Bill Davidson, "A City in Trouble," and Russell Baker, "It's Middletown-on-the-Potomac," in Bill Adler, ed., *Washington, A Reader* (New York: Meredith Press, 1967), 212, 203. (2) Clarke quote in *Washington Post*, Aug. 19, 1962. (3) Green, *Washington, Capital City*, 427-28.

6 (1) Green, *Washington, Capital City*, 435, 437-38. (2) 41 Stat. 837.

gressional reluctance to surrender power. Even then, some basic reasons for District residents to acquiesce in federal control were fading away. In 1920 the longtime 50/50 sharing arrangement by which the Treasury paid half the District's bills had given way to a 60/40 standard, with the city on the short end. In the next decade this in turn gave way to lump sum payments which meant less and less in terms of the soaring District budget. In 1939 the federal government paid only 11 percent of the local cost of government. Yet Congress — and especially the two District committees — continued to decide how Washingtonians should spend their own money on their city. Abounding in earnestness and talent, Washington's government faced its postwar challenges with confused lines of authority, and, in crucial areas, diminished support from the White House, Congress, and the people.⁶

To lure the middle class back into the District, to provide efficient transport for the whole metropolitan region, and to regulate growth by systematic planning became the goals of major federal initiatives. In August 1946 President Harry S Truman approved the District of Columbia Redevelopment Act by which Congress set up the Redevelopment Land Agency to acquire blighted areas for clearance and new construction. By general agreement, the city's chief slum problem was the area bounded by the Mall, South Capitol Street, the Anacostia River, and Washington Channel. Brig. Gen. U. S. Grant III had returned to Washington in 1942, interrupting his military career to head the planning commission at the behest of Frederick Delano, who recommended him to President Roosevelt. Grant emerged as an advocate both of city planning and of public housing, a compromiser who played a behind-the-scenes role in the legislation of 1946. In 1949 the Federal Housing Act brought Washington into a national redevelopment program, and in 1950 the commission's report *Washington Present and Future* projected a new Southwest with both low and high-cost housing. While most of the area would be razed, historic structures would be preserved, and a theatre and a shopping center built, along with eight new government office buildings. In 1951, Congress funded the RLA, and the Engineer commissioner appointed an assistant commissioner for urban renewal to act as liaison.⁷

7 (1) William R. Barnes, "A National Controversy in Miniature: The District of Columbia Struggle over Public Housing and Redevelopment, 1943-46," *Prologue*, IX (1977), 100-101. (2) *Redevelopment Plan, Southwest Redevelopment Project Area B* (Washington: NCPCC and RLA, 1952). (3) 60 Stat. 790. (4) Nolen interv.

Intimately related to the housing question was highway construction. In 1946, Engineer commissioner Brig. Gen. Gordon R. Young released for public comment a six-year plan for the capital. "The Metropolitan Area of Washington," the study declared, "has become a geographic, social, and economic reality." Warning against the dangers which dispersion posed for the central city, Young proposed beltline and lateral freeways — including a Baltimore-Washington freeway and an Anacostia-Kenilworth freeway — to keep the spreading suburbs in intimate contact with the traditional downtown.

A similar viewpoint guided the planning commission's 1950 study. In the commission's view, congestion could be moderated by locating places of employment away from the central city, but only if freeways existed to serve as a circulatory system for the whole metropolis. Projecting an idea which became fundamental to subsequent planning, the commission proposed to create an inner and outer ring of freeways with radials to connect District and suburbs. An elevated freeway would cross the redevelopment area of the Southwest on its way to join the inner loop in the Southeast, and a beltway would circle the city at a distance of 6 to 10 miles.⁸

Whether dispersion was viewed as a menace or an inevitability, freeways seemed to provide the answer to the urban transport dilemma. That such immense works might injure the city they were meant to revive was occasionally recognized even in the 1950's. In 1952 Engineer commissioner Brig. Gen. Bernard L. Robinson foresaw that "broad relationships to the land use plan of the city as a whole" and "internal neighborhood planning . . . and stability of residential areas may cause some modification to the plan." In a 1959 speech to the Columbia Historical Society, Grant criticized his *bête noire*, the District highway department, for ignoring Robinson's words and warned that highway building "without due consideration of other elements that enter into sound city planning" could have dire effects:

. . . it is only too likely that we may find millions have been spent to facilitate rapid automobile access to and egress from the abandoned business centers of cities having too few and too poor residents left to pay the taxes for the support of the city government serving the suburban population.

But at this date the vision of a coherent metropolis linked by highways to a revitalized District had few questioners. The effort to

(1) Quote from Brig. Gen. Gordon R. Young, *A Preliminary Six-Year Plan for Postwar Washington* (Washington, 1946), 2. (2) See also, by same author, et al. *Washington: A Plan for Civic Improvements* (Washington 1947). (3) *Washington Pre-*



Brig. Gen. Bernard L. Robinson, 1953.

resolve social problems by structural change began.⁹

While the RLA made its first purchases in the Southwest and planners debated a new highway system, construction was already under way on a new and systematic upgrading of the Aqueduct. In 1940 and again in 1941 Congress had voted money to enable the Engineers to develop a plan for an adequate future water supply. During the war years Engineer commissioner Kutz and district Engineers Col. William J. Barden, Col. Clarence Renshaw, and Col. John M. Johnson cooperated in working out a complex \$41.4 million plan. Pointing to the "influx of people due to the expansion of Federal activities and to the war emergency" as the root cause of area growth since 1930, the Engineers predicted that continued growth would reach "saturation" in the District and nearby Alexandria about the year 2000.

Unique in that all national emergencies including the Depression had increased its size, the capital region required not a one-shot construction effort, but systematic improvement according to a long-range plan. The Engineers proposed a four-stage, 43-year program to begin in 1947 and gradually bring the Aqueduct by 1990 to a

sent and Future: A General Summary of the Comprehensive Plan for the National Capital and its Environs (Washington: NCPPC, 1950.)

(9) Grant, "Reminiscences of Sixty-Five Years," 13-14.



Domiciliary Building, Soldiers' Home, 1952.

condition for handling the peak loads predicted for a 21st-century population of 1.46 million in the District and Arlington. Included in the first stage were improvements to McMillan and Georgetown reservoirs, a new pumping station at Dalecarlia, and improvements to mains and pumping stations.¹⁰

That same year Congress voted the first appropriation from the District water fund, later authorizing the Treasury to loan \$23 million to assist the work. By 1950 work on the conduit, at McMillan, and at Dalecarlia was well advanced, with planning under way on other major projects. Improvements by the District water division included laying of new pipelines and electrification of the Bryant Street pumping station. Apart from the plan but significant for public health was the Engineer decision in 1952 to fluoridate District water. By that year Aqueduct and water division planners hoped to complete major projects within fifteen years, doubling the capacity of the water system. Pumping, storage, and distribution facilities gave Washington the jump on future needs. But low water and pollution in the Potomac remained as continuing problems during the decades ahead.¹¹

The Washington Engineer district continued to take on important new projects. Congress did not vote money to resume work on Anacostia Park, but in 1948 the district resumed work on the Washington channel improvements, building an excursion pier which it transferred in 1955 to the District of Columbia for operation and maintenance. Wartime had brought the Engineer dis-

trict work at Walter Reed Army Medical Center, with its special technical needs. After the war the Corps built an atomic-age structure, the Armed Forces Institute of Pathology. Completed in 1954, the windowless building of reinforced concrete possessed its own emergency power plant and, sheltered within blast-resistant walls, laboratories, offices, archives of records and anatomical specimens, and educational facilities for civilian and military medical services. And in 1948-53 the district carried out a \$14 million expansion of the venerable Soldiers' Home.¹²

The most unusual Engineer project of the period was the reconstruction of the White House. In 1947, U. S. Grant's two-decade-old warning that the structure was unsound proved dramatically correct as a chandelier in the Blue Room began to sway above the guests at a presidential reception. Shortly afterward, the ceiling of the East Room dropped six inches on one side. In May 1948 Congress ordered a full examination, with startling results. Investigators found the entire second floor to be unsafe, the load-bearing walls grossly inadequate, and the exterior walls overloaded and in need of underpinning.

Congress voted \$5 million to renovate the mansion, and Harry S. Truman and his family moved to Blair House for the duration of the work. Under supervision of a six-man commission, Engineer Maj. Gen. Glen E. Edgerton and his assistant Col. Douglas H. Gillette directed the operation. Laborers first demolished and trucked away the whole interior of the mansion and excavated a basement within the walls. A cat's cradle

10 (1) *Adequate Future Water Supply for the District of Columbia and Metropolita Area*, H. Doc. 480, 79th Cong., 2d sess. (1946), quote, 1; also xi, 11-25, 94a. (2) 54 Stat. 307 and 55 Stat. 499.

11 (1) 60 Stat. 520 and 64 Stat. 195. (2) ARCE, 1950, II, 2821;

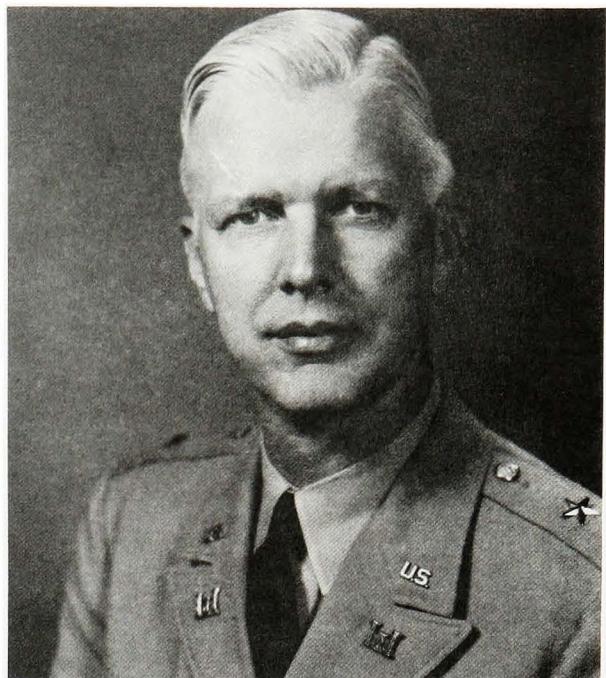
1960, II, 311. (3) *History of the Washington Aqueduct* (Washington: U.S. Army Corps of Engineers, 1953), 58.

12 (1) Duryee, *Corps in the Nation's Capital*, 121-23. (2) ARCE, 1948, I, 562; 1950, I, 480; 1955, I, 235.

of steel beams rose within the ancient masonry. Outside, workmen dug 30 feet to a hardpan stratum and poured a concrete underpinning for the walls. Behind the 18th-century facade a steel and concrete building took shape.

As restoration proceeded, the Engineers built into the new White House much that was beautiful and characteristic in the old. The state dining room was preserved, as were the mahogany doors with their silver hardware, the crystal and silver chandeliers, the bronze torcheres, the electric fixtures, the marble mantels, the furniture and rugs, even the damask of the old Green Room. These careful and sensitive touches ended a major construction job. The mansion's 132 rooms and 1.5 million cubic feet of space had been rebuilt from the inside out: 19,500 yards of earth had been excavated, half a million feet of wiring installed, and 1,500 gallons of paint spread over the interior and exterior. In 1953 President Dwight D. Eisenhower took up residence in a building that was both familiar and new.¹³

As reconstruction proceeded, the Engineers struggled with major changes that loomed on Washington's horizon. Construction projects completed in 1950 under Brig. Gen. Gordon R. Young included the South Capitol Street Bridge and, parallel to the old Highway Bridge, a new northbound span that was later named for Count Rochambeau, commander of the French army in the Revolution. Beyond such individual projects, however, the 1950's became a decade characterized by massive structural plans in transport and water supply. At the same time, renewal



Brig. Gen. Thomas A. Lane, 1955.

schemes moved from planning board to reality. In 1953 RLA bulldozers began to level the Southwest. In that same year, Engineer commissioner Brig. Gen. Louis W. Prentiss and his colleagues foresaw Washington's future in terms of urban renewal, a Southwest freeway, a dam at Little Falls for the Aqueduct, and construction of a new Potomac bridge and new parkways to carry off the traffic of the Northwest. Prentiss's successor, Brig. Gen. Thomas A. Lane, serving as District representative on the regional planning council, saw the proposed Washington Beltway win approval.¹⁴

Federal assistance to local planners increased in 1956, when Congress voted to create a federal highway system with 90 percent federal financing for approved limited-access roads. In 1959 the planning commission unveiled a half-million-dollar mass transportation survey recommending 330 miles of freeways in the metropolitan area, as well as a 99-mile rapid transit system including 66 miles of bus lines and 33 miles of subways and surface rails. The plan called for a \$2.5 billion investment to serve a metropolitan population expected to rise to 3 million by 1980.¹⁵

Part of the same golden age of structural planning was the comprehensive water supply program worked out by the Engineer district between Times-Herald, special reprint of articles appearing Jul.-Aug. 1953.

13 (1) This account based on Douglas H. Gillette, "Reconstruction of the White House," *The Military Engineer*, XLV (1953), 8-12. (2) 62 Stat. 216.
14 (1) Caemmerer, "Corps and the Capital City," 210. (2) *District of Columbia Redevelopment Land Agency Annual Report*, 1954 (Washington, 1954), 1. (3) "Multi-Million Dollar Face Lifting or Strangulation for Nation's Capital?" Washington



Brig. Gen. Gordon R. Young and Mrs. Young with President Harry S. Truman, 1951.

13 (1) This account based on Douglas H. Gillette, "Reconstruction of the White House," *The Military Engineer*, XLV (1953), 8-12. (2) 62 Stat. 216.

14 (1) Caemmerer, "Corps and the Capital City," 210. (2) *District of Columbia Redevelopment Land Agency Annual Report*, 1954 (Washington, 1954), 1. (3) "Multi-Million Dollar Face Lifting or Strangulation for Nation's Capital?" Washington



Brig. Gen. Alvin C. Welling, 1961.

ween 1957 and 1961. Based on a systematic study of the resources of the Potomac basin, the plan projected a system of reservoirs to provide a dependable water supply, put a rein on flooding, and augment the Potomac's low-water flow.¹⁶

Rapid progress in construction during the Eisenhower era was followed in the early 1960's by signs of rising opposition. During his 1958 - 60 term, energetic Engineer commissioner Brig. Gen. Alvin C. Welling, backed by solid support on Capitol Hill, pushed the Southwest freeway across the urban renewal area and began to build the Theodore Roosevelt Bridge across the Potomac. He worked on the capital's mass transit plan, chaired the regional sanitary board, and won approval and began construction of a federally funded interceptor sewer to prevent pollution of the Potomac by a new airport at Chantilly, Virginia. Succeeding him, Engineer commissioner Clarke faced the problem of extending the freeway into the populated Southeast. "We had arrived," he said, "at what I called 'the bulldozer in the bedroom'." To alleviate suffering, he urged the District to aid people displaced by the freeway to find new homes. Assistant Engineer commissioner Col. Thomas K. Fullerton, a key figure in District renewal, began to work with neighborhoods not scheduled for demolition. He organized residents by blocks to

16 *Potomac Basin Study* (Baltimore: U.S. Army Engineer District, 1961), 9, 15-27.

17 (1) Quote from Clarke interv. (2) Interview with MG Alvin C. Welling, USA (Ret.). Washington, D.C., 15 Jan 1974. (3) *Washington Post*, Jan. 15 and Nov. 19, 1961; *Star*, June 23,

paint and clean up in a program both modest and successful.¹⁷

As chairman of the newly-established metropolitan area transit commission, Clarke also labored for a diversified transport system that would not rest on freeways alone. He secured uniform fares and regulations for all bus lines in the region. With Maryland and Virginia officials, he worked an area-wide subway compact — the foundation of Washington's future Metro rail system. He carried forward the Roosevelt Bridge and completed the George Mason Bridge at 14th Street, which replaced the old Highway Bridge carrying southbound traffic to Alexandria. Construction continued on important road links — the Rock Creek and Potomac parkway extension and the Anacostia freeway; and in June 1963 first contracts were let on the 11th Street Bridge over the Anacostia.¹⁸

But in 1961 highway plans came under attack, as planning and fine arts commission members began to shift their ground toward a transport system that would emphasize subways as the main reliance of the capital. Their thinking was influenced by serious problems developing over the so-called Inner Loop of freeways that was to cut across the Southeast. Residents protested bitterly, and in 1962 the civilian commissioners asked Congress to delay part of the Loop, while Clarke stood by the existing plans. A new federal transport agency then proposed to reduce highway mileage from over 300 to 50, reversing the emphasis of earlier plans. By year's end the earlier consensus on transport policy had slipped away.



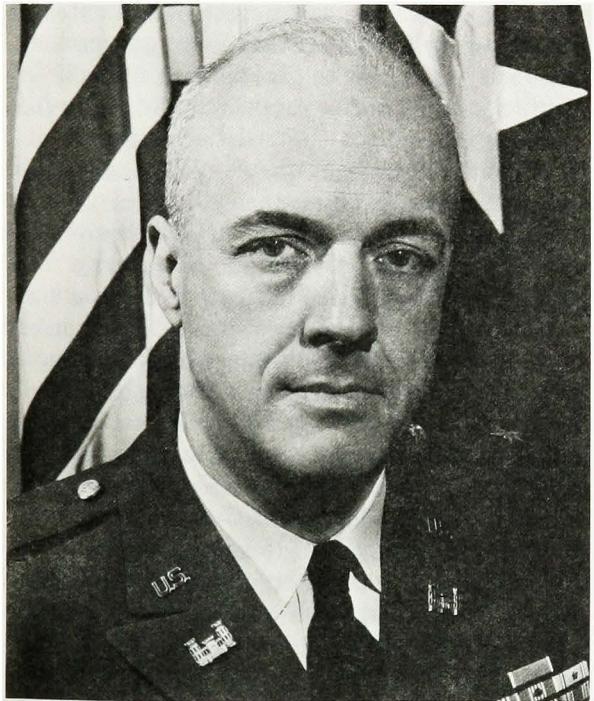
Brig. Gen. Frederick J. Clarke (Right) with Sen. Robert C. Byrd of West Virginia During Construction of the Roosevelt Bridge, 1961.

1961.

18 (1) Clarke interv. (2) *Washington News*, Jan. 27 and Mar. 28, 1962; *Star*, Jun. 19, 1963.



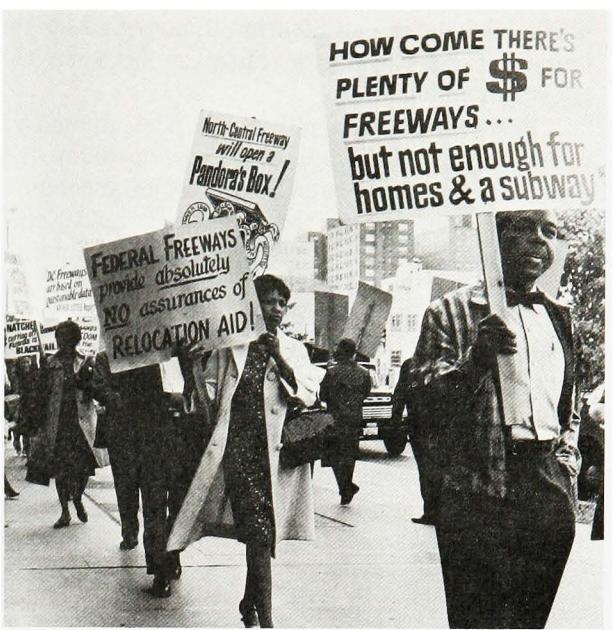
Brig. Gen. Charles M. Duke, 1963.



Brig. Gen Jackson Graham, 1961.

In the years that followed, much of the planned freeway network was gradually abandoned; the Southeast freeway terminated in midair at 6th Street. Moving to find a new consensus, Congress in 1966 set up the Washington Metropolitan Area Transit Authority under a board which included Engineer commissioner Brig. Gen. Charles M. Duke. This agency worked out a subway and

19 (1) Summarized from accounts in the *Washington Evening Star*, Oct. 8, 10, 21, 31, 1961; *Post*, Oct. 9, 19, 27, 29, 31, and Nov. 11, 1961. (2) See also Scott, *American City Planning*, 579. (3) On



Protest Against Freeways, 1968.

surface rail system to serve the whole area. Endorsement of the new plan — and of its financing — by voters of the District and five suburban counties allowed planning for Metro to begin, with a retired Engineer, Maj. Gen. Jackson Graham, as general manager.¹⁹

But the transport debate had helped to trigger broader changes. "The debate over roads," wrote a *Washington Post* reporter in 1963, "has expanded to take in every great social issue of a city only now beginning to awaken politically."²⁰ Along with urban renewal, roads became an issue between poor and affluent, black and white, resident and suburbanite. Since World War II, a steady influx of southern blacks had been transforming the capital city. In the 1960's pressures of change had become acute. By 1967 blacks made up 63 percent of the District population and 93 percent of the public school pupils.

Taking the houses abandoned by migrating whites and older black residents, these new Washingtonians viewed plans for remaking the city in quite a different light from those who drew them. The successful Southwest development was a sore spot, as high-cost apartments drew affluent whites at the cost of permanently excluding the poor from large areas. Some families driven from the area found refuge in substandard dwellings. In 1961 a new spokesman, Rev. Walter E. Fauntroy, coined the slogan that for blacks "urban renewal means urban removal." To them, highways built for commuters similarly appeared as white men's roads through black men's homes. What whites saw as progress, Graham, see *Washington Post*, Jan. 19, 20, 21, 1975. 20 *Washington Post*, Jun. 9, 1963.

blacks viewed as exploitation. Sharpened by the transport debate, a confrontation between the races impended.²¹

Politically awakened, blacks also turned an unfriendly gaze upon the District government. They saw the conservative congressional committees as enemies — "the backward anti-Negro committee," Washington's first black commissioner called the House group. Committed to racial justice nationwide, the White House increased tensions by pursuing unclear policies in the city. President John F. Kennedy appointed a special assistant for District affairs, who diverted power from the commissioners without taking on responsibility for governing. Under President Lyndon B. Johnson's poverty program, some federal grants flowed to radical neighborhood groups whose demands raised hopes that the city could not meet. At the same time, the sheer distance of the postwar presidency from local affairs tended to leave the commissioners suspended between an immobile Congress and the restless neighborhoods.²²

Confronted by a reversal of established political values, the commissioners — nonpolitical technicians and planners — found themselves out of their element. The federal government's long-time company town was changing its character. Federal appointees faced a situation ruled by racial stress, unfamiliar slogans, and the boundless needs of the poor. For Washington, the day of nonpolitical government had passed. Pressed by national problems which included urban rioting, President Johnson on 1 June 1967 sent to Congress a plan for a new form of government in Washington. Still appointive, the new set-up would permit the President to name a black majority to the city council under a single commissioner whose function would be similar to that of a mayor. The condition of the city and the influence of the President made congressional assent seem likely.²³

Engineer commissioner Brig. Gen. Robert E. Mathe had known since February 1967 that he was to be the last of his line. While Congress debated the Johnson proposals, Mathe and his fellow commissioners maintained public order through a period marked by a soaring crime rate and tumultuous protests against the Vietnam War. At mass meetings, Mathe faced angry

21 (1) *Washington Sunday Star*, Oct. 1, 1967, p. A12. (2) Interview with BG Robert E. Mathe, USA (Ret.), Washington, D.C., 12 Feb 1974. (3) *Report to the Congress of the United States: Inadequate Policies and Practices Relating to the Relocation of Families from Urban Renewal Areas* (Washington: The Comptroller General of the United States, September 1964); H. Rept. 1481, 88th Cong., 2d sess. (1964). (4) Quote from *Washington Post*, Jan. 30, 1961.

22 (1) Quote from Clarke interv. (2) See editorial, "White



Brig. Gen Robert E. Mathe.

crowds of ghetto dwellers demanding jobs, welfare assistance, and neighborhood autonomy which were beyond the city government's authority or means to give them. Under difficult conditions, he tried to replace the old single-focus highway division with a District department of transportation, set up a system to enable Engineers to take advanced degrees in urban planning, and helped persuade Graham to take on the construction of the Metro subway. On 9 August 1967 the House followed Senate action by approving the Johnson reorganization plan, ending 89 years of rule by the three-member commission and direct participation in the government by the Corps of Engineers. The Corps was authorized to assign three officers to assist the new government, but as General Clarke — then deputy Chief of Engineers — recalled later, "We mutually agreed [with the city] that we would not assign any . . . officers to help run the city. It would be best for both of us to sever relations about that time."²⁴

While this drama played out in the District building, the White House, and the halls of Congress, major changes also came to the Engineer district. Rising population and the variability of the Potomac's flow had presented the district with two major problems: securing an adequate House Support," *Washington Star*, Oct. 3, 1967. (3) Mathe interv. (4) See also Daniel P. Moynihan, *Maximum Feasible Misunderstanding: Community Action in the War on Poverty* (New York: The Free Press, 1969), 102-66.

23 (1) *Washington Post*, Jun. 2, 1967. (2) Mathe interv. (3) See also circular ltr, Chf of Engrs to MG Albrecht, MG Lane, GEN Moses, LTG Wheeler, MG Bowman, MG Prentiss, BG Duke, LTG Lincoln, BG Johns, 6 Mar. 1967, DC Reorg file, EHD.

24 (1) Quote from Clarke interv. (2) Mathe interv.



Washington's Subway: Metro Center Station, 1976.

supply during protracted low water, and pollution control. In developing a Potomac river-basin plan, the Engineers, after analyzing the natural and human resources of the valley, proposed a system of reservoirs as the best long-term answer. In the spring of 1961 the district fired "a most important opening shot" by proposing a dam near Cumberland, Maryland. In November the Baltimore district — which had absorbed the Washington office in June 1961 — put forward four alternative plans. Attention quickly focused on the one that projected a 110-foot dam at Riverbend above Great Falls. Assuring a close-in water supply and recreational resource, the scheme would also wipe out 35 miles of the C&O canal and inundate developed farm and suburban areas in Montgomery and Loudoun counties. Ultimately eleven other reservoirs and more than 400 small upstream dams would be built as well.²⁵

Reflecting the structural emphasis of the 1950's, the plan required the politically fragmented residents of the basin to work together for a distant goal costing large sums and much social upheaval. Rural electric co-ops and businessmen's groups tended to favor the Corps' proposals, while Supreme Court Justice William O. Douglas spoke for preservationists when he declared that a proposed dam at Seneca Creek would "inundate some of the loveliest lands in America and substitute . . . a group of stinking mudbanks."²⁶

The plan was doomed, however, not by coherent opposition but by the fragmentation and localism of the region. City residents wanted

all dams built far upstream, but farmers saw no reason to inundate their land to assure a flow that would fill Washington's Aqueduct and flush away the city's pollution. The pastor of the Galilee Methodist Church in Broad Run Farms, Virginia, spoke for many when he declared that he intended to build a new church for his congregation and not "a Noah's Ark." Later Congress voted funds for one dam and reservoir on the Potomac's North Fork — construction of which began in 1971 — and authorized two others in Virginia without funding them. By this time the plan was dead. Unfortunately for Washington, the problems it was meant to solve were not. In 1974, the city's peak demand outran the river's lowest daily flow by 32 million gallons, and sooner or later peak demand and low flow would coincide. But a definitive answer would have to cope with the political realities that defeated the comprehensive plan.²⁷

Though the commission government was gone and district headquarters moved to Baltimore, much Engineer work in the capital continued along familiar lines. Untouched by the upheavals, the long upgrading of the Aqueduct went on throughout the period under regular appropriations. By 1955, repairs to the McMillan filter plant were well advanced, work was under way on the Little Falls pumping station, dam, and tunnel, and new technology promised improved quality control of filtered water. By 1960 the Little Falls work was almost complete, and the Engineers were constructing fishways and rounding off work at Dalecarlia. The mid-1960's

25 (1) Quote from *Washington Evening Star*, Apr. 26, 1961. (2) *Potomac Basin Study*, 15-17.

26 *Washington Post*, May 22, 1962.

27 Quote in *Washington Star*, May 29, 1962.



The New Southwest.

saw near completion of the complex utility reconnections involved in the improvement plan, and landscaping work under way. Meanwhile, plans were well advanced for a Great Falls intake structure and a new operating center at McMillan. Planning for the Aqueduct succeeded while broader and more disruptive efforts failed elsewhere.²⁸

New construction by the Engineer district continued both in the city and in outlying communities. Included were a medical facility, vehicle fueling station, and other improvements at Andrews Air Force Base, and a supermodern \$102 million seven-story hospital building at Walter Reed Army Medical Center, scheduled for completion in 1977. Suburban projects included the multimillion-dollar National Security Agency complex at Fort Meade, the First Army Headquarters, and the \$40 million Harry Diamond Weapons Laboratories at Hillendale, Maryland. New in Engineer experience was construction

work resulting from agreements in 1970 and 1971 between the chief's office and the United States Postal Service. Setting up a directorate of postal construction, the Corps between 1972 and 1975 built a bulk-mail handling facility near Largo, Maryland, as part of a nationwide program.²⁹

Engineer restoration work also continued. Among major jobs were the refurbishing of a local landmark, the Georgetown Castle gatehouse, and improvement of the historic National War College. Since 1946 a graduate school for promising officers of all three armed services and civilians as well, Charles F. McKim's classic building proved to be short of space for its new role and, after two generations of use, in need of repair. Discomfort impaired learning, as students suffered through Washington summers under churning ceiling fans of antique vintage. In December 1964 the District set to work, and over the following year replaced floors, hung new ceilings, air-conditioned the structure, replastered it, and built a new annex below the esplanade. A new glass-and-marble vestibule greeted visitors, but exterior lines and proportions of the building were preserved.³⁰ In 1976 the War College and the nearby Industrial College of the Armed Forces —



Reconstruction of the War College, 1965.



Industrial College of the Armed Forces.

28 ARCE, 1955, II, 246; 1960, II, 312-13; 1965, II, 307.

29 (1) Harold K. Kanarek, "History of the Baltimore Engineer District," Ms Installation History, p. 218-19, 223, 225, EHD. (2) Dennis S. Lavery, "The Postal Support Effort in the Corps of

Engineers," Ms. rpt dtd Feb 1976, EHD.

30 Following based on Vincent J. Perricelli and Rufus E. Green, "Renovating the National War College," *The Military Engineer*, LVII (1965), 346-48.

also housed in a building whose construction the Engineers had directed — were joined to form the National Defense University.

Throughout the Washington area, Engineer work continued to be varied and extensive, but it no longer differed in kind from work in other parts of the country. The special mission was

over. Yet the projects to which Engineers had contributed, from the early bridges and the Aqueduct to Metro and beyond, would long endure. Washington under its new government — or under others that might follow — would benefit for centuries from the physical heritage that the Army Engineers had helped to bequeath.

Appendix

Officers prominent in the Government of the District of Columbia,
Washington Engineer District, and Related Agencies.

I. Engineer Commissioners of the District of Columbia.

William J. Twining	1878-1882
Garret J. Lydecker	1882-1886
William Ludlow	1886-1888
Charles W. Raymond	1888-1890
Henry M. Robert	1890-1891
William T. Rossell	1892-1893
Charles F. Powell	1893-1897
William M. Black	1898-1901
Lansing H. Beach	1898-1901
John Biddle	1901-1907
Jay J. Morrow	1907-1908
William V. Judson	1909-1913
Chester Harding	1913-1914
Charles W. Kutz	1914-1918
John G.D. Knight	1917-1918
Charles W. Kutz	1918-1921
Charles Keller	1921-1923
J. Franklin Bell	1923-1927
William B. Ladue	1927-1930
John C. Gotwals	1930-1933
Daniel I. Sultan	1934-1937
David McCoach, Jr.	1938-1941
Charles W. Kutz	1941-1945
Gordon R. Young	1945-1951
Bernard L. Robinson	1951-1952
Louis W. Prentiss	1953-1954
Thomas A. Lane	1955-1958
Alvin C. Welling	1958-1960
Frederick J. Clarke	1960-1963
Charles M. Duke	1963-1967
Robert E. Mathe	1967

II. Officers in charge of the Washington Aqueduct.

Montgomery C. Meigs	1852-1862
Henry W. Benham	1860
James St. C. Morton	1860-1861
Nathaniel Michler	1867-1870
George H. Elliot	1870-1871
Orville E. Babcock	1871-1877
Thomas L. Casey	1887-1882
Garret J. Lydecker	1882-1889
John M. Wilson	1889
George H. Elliot	1889-1895
John G. D. Knight	1895
Charles E.L.B. Davis	1895
Davis D. Gaillard	1895-1898
Charles J. Allen	1896
Edward Burr	1898
Theodore A. Bingham	1898
Alexander M. Miller	1898-1904

III. District Engineers, Washington District.

Sylvanus T. Abert (Civil Engineer)	1875-1882
Peter C. Hains	1882-1891
Lewis C. Overman	1891
Thomas Turtle	1891-1892
Charles E.L.B. Davis	1892-1896
Charles J. Allen	1896-1904
Alexander M. Miller	1904
William P. Wooten	1904
Smith S. Leach	1904-1905
Richard L. Hoxie	1905
Spencer Cosby	1905-1908
Elliott J. Dent	1908
Jay J. Morrow	1908-1910
Warren T. Hannum	1910
William C. Langfitt	1910-1914
Henry C. Newcomer	1914-1915
Charles W. Kutz	1915
Harry F. Hodges	1915
Clement A.F. Flagler	1915-1917
Walter L. Fisk	1917-1919
Max C. Tyler	1919-1923
J.A. O'Connor	1923-1926
Brehon B. Somervell	1926-1930
Joseph D. Arthur, Jr.	1930-1934
Leland H. Hewitt	1934
John C. H. Lee	1934
Frank O. Bowman	1934
Robert W. Crawford	1934-1935
William J. Matteson	1935-1937
Robert G. Guyer	1935
Walter D. Luplow	1937-1938
Robert S. Thomas	1938-1940
William J. Barden	1940-1942
Donald A. Phelan	1942
Clarence Renshaw	1942-1944
John M. Johnson	1944-1945
Donald G. White	1945-1948
John W. Califf (Acting)	1948
Henry C. Wolfe	1948-1950
Harry R. Davis (Acting)	1950
Alan J. McCutchen	1950-1953

IV. Officers in charge of public buildings and grounds (After 1925 the Office of Public Buildings and Public Parks of The National Capital).

Nathaniel Michler	1867-1871
Orville E. Babcock	1871-1877
Thomas Lincoln Casey	1877-1881
Almon F. Rockwell (Quartermaster Corps)	1881-1885
John M. Wilson	1885-1889
Oswald H. Ernst	1889-1893
John M. Wilson	1893-1897
John S. Sewell	1897
Theodore A. Bingham	1897-1903
Thomas W. Symons	1903-1904
Charles S. Bromwell	1904-1909

Spencer Cosby	1909-1913
William W. Harts	1913-1917
Clarence S. Ridley	1917-1921
Clarence O. Sherrill	1921-1926
Ulysses S. Grant III	1926-1933
James A. Woodruff	1933

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While it was originally anticipated that this monograph would be drawn largely from published sources, manuscripts relating both to the Corps and the City of Washington took on greater importance as the story developed. At the National Archives, Record Group 77 yielded rich materials on the activities of the Corps of Engineers and the Corps of Topographical Engineers in the capital city. Records of the office of public buildings and grounds, contained in Record Group 42, also proved exceptionally valuable. Among published source materials, government documents were essential in developing a picture of the Corps' role. Besides congressional documents — an abundant source of information on Washington history — the *Annual Reports of the Chief of Engineers* (1866 -) formed a year-by-year guide to Engineer activities in so far as these fell under the authority of the Chief of Engineers. The *Annual Reports of the Commissioners of the District of Columbia* (1875-1967; slight variations in title) were basic to an understanding of the work of the Engineer commissioners. For recent decades, considerable reliance was placed upon the city's newspapers. Among significant secondary sources were the following:

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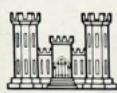
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Washington's monument 16th Nov. 1851